FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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MAY, 1944

Vol. 97. No. 5

THE JOHN CRERAR
MAY 27 1944
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Phosphorus Bomb Sprays Japanese Planes Parked at Rabaul.

A CASE - SHEPPERD - MANN PUBLICATION

That Men May Live

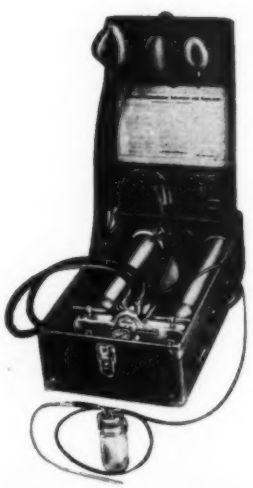
TO WIN THE WAR AND THE PEACE THAT FOLLOWS

EMERSON

RESUSCITATORS–

Used by fire departments, industrials and hospitals are saving human life. By preventing unnecessary death from smoke-suffocation, carbon-monoxide poisoning, drowning, etc., Emerson equipment is helping conserve Manpower, so vital to the winning of the war and the peace that follows.

Your community can make a better contribution to war and peace when protected by Emerson Resuscitators and Iron Lungs—Let us cooperate with you in making this possible.



★ *Write for further data or a demonstration before your department.* ★

J. H. EMERSON COMPANY

Representatives in Principal Cities

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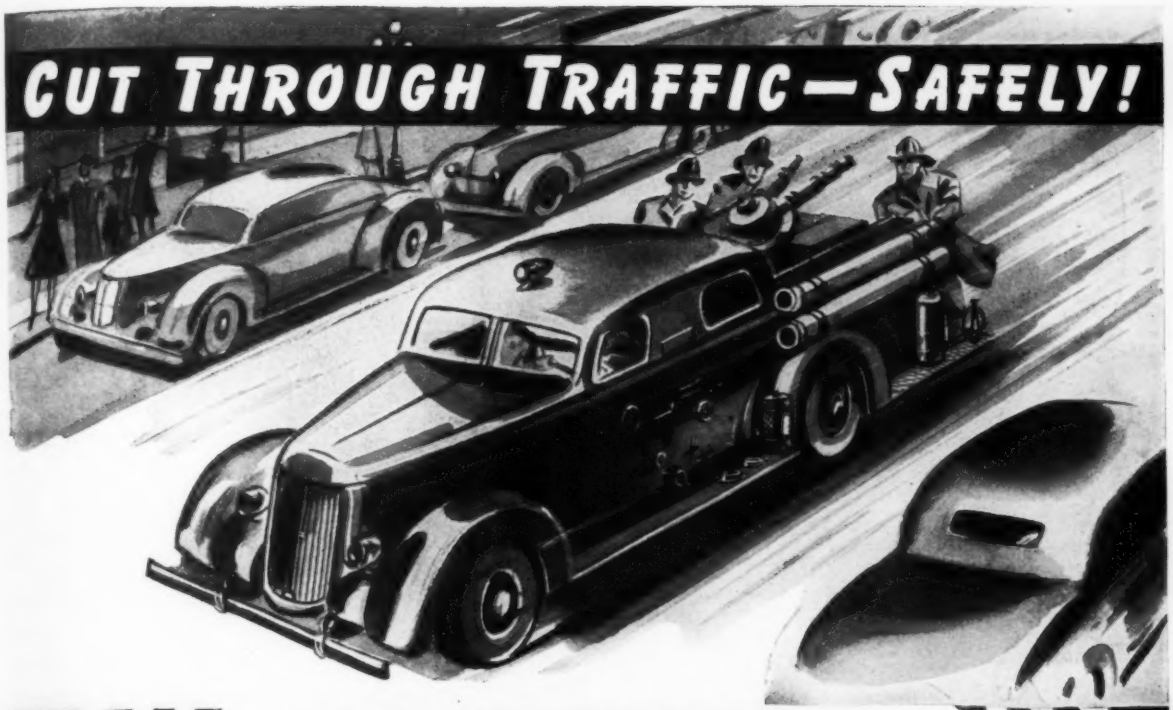
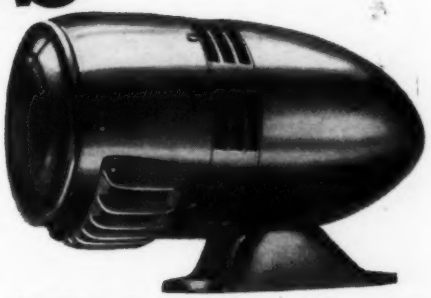
FIRE ENGINEERING, May, 1944. Vol. 97. No. 5. Published monthly by Case-Shepperd-Mann Publishing Corporation, 24 W. 40th St., New York, N. Y. Subscription price: U. S., $2.50; Canada, $3.00; Foreign, $3.50 a year; single copies, 25c. Entered as second-class matter April 15, 1929, at the Post Office, New York, N. Y., under the Act of March 3, 1879.



FEDERAL SIRENS

The best protection for your men, valuable equipment, and the public, are FEDERAL emergency vehicle sirens. They are the product of more than 40 years of "sound" research and engineering that have resulted in clear, powerful and unmistakable tones—and details of design and the selection of materials that assure long and unfailing service. FEDERAL sirens will help you cut through traffic—safely.



FEDERAL offers many types of sirens—long roll, coaster, doubletone coaster—with or without flashing or oscillating red light. There is a FEDERAL Siren for every requirement.

WRITE FOR BULLETIN

FEDERAL ELECTRIC CO., INC.

SIREN HEADQUARTERS

8702 So. State Street Chicago 19, Illinois

IN FIGHTING FIRE WITH FOG . . . IT'S

YOU MUST HAVE

800 lbs.

AT THE PUMP

Fight Fires the Surest Way with FMC High-Pressure Fog

You get the real "blasting," *fire-killing* fog with the FMC High-Pressure Fog Fire Fighter.

Here's why! The FMC High-Pressure Pump easily *delivers* and *maintains* 800 lbs. pump pressure—more than 600 lbs. nozzle pressure.

This high pressure gives greater protection and makes it possible for the fireman to get in close and to *smother the flame with a blanket of fog.* The finely-atomized water is "blasted" right into the source of the fire.

The result? The blazing material *quickly cools*—the temperature drops below the combustion point.

Furthermore — the high-pressure fog quickly turns into steam causing *little or no water damage.*

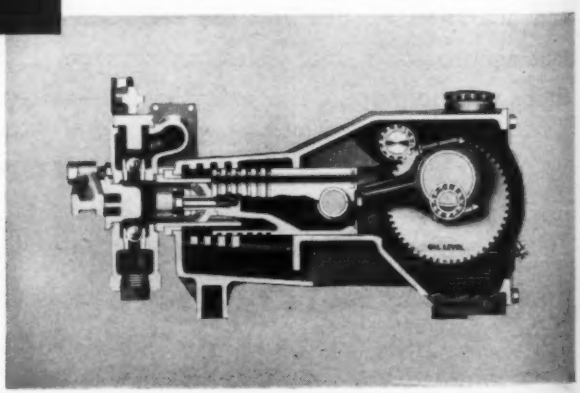
Investigate! Get the facts about this new and revolutionary fire-fighting technique. Right now—the Armed Forces are taking thousands of FMC High-Pressure Fog Fire Fighters. However, you should be ready to modernize just as soon as civilian needs can be met.

FMC HIGH-PRESSURE PUMP — BUILT ONLY BY BEAN —

This is the pump that has revolutionized fire-fighting technique.

Note how sturdy and compact it is—how simple, yet modern in design! The cylinders are porcelain-lined; the gears are helical cut, and there are latest type bearings on the eccentric shaft and countershaft. Both the ball valves and their threadless and gasketless tapered seats are of stainless steel. And all working parts are bathed in oil. It has many other endurance features.

No wonder this FMC High-Pressure Pump is free from mechanical troubles! No wonder it is able to deliver, without overworking, more than 800 lbs. pump pressure.



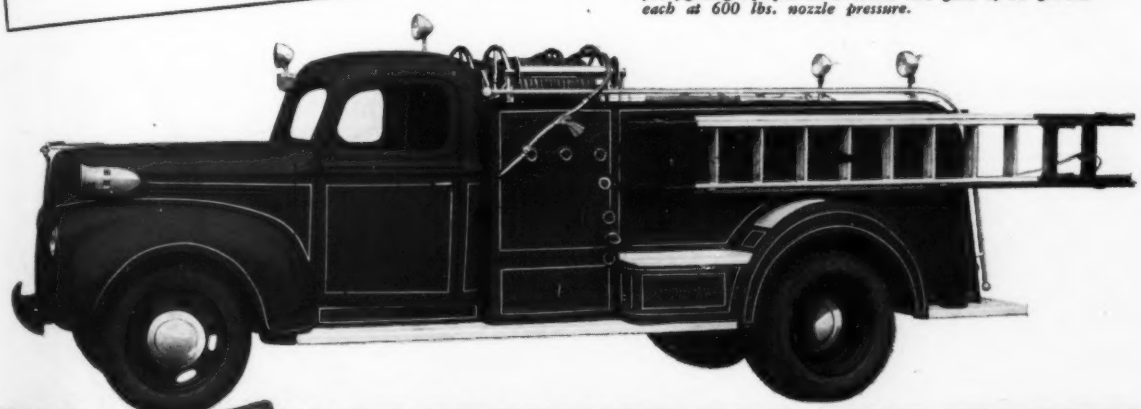
BUILDERS OF BEAN HIGH-PRESSURE

THE *PRESSURE* AND THE *PUMP!*

FMC FOG FIRE GUNS IN ACTION! *Fireman at left is using the straight fog stream. Fireman at right has moved in close and has adjusted trigger control to secure the full fog cloud.*

ONLY THE FMC HIGH-PRESSURE FOG FIRE FIGHTER PACKS THE NEEDED PUNCH TO PRODUCE AND MAINTAIN 800 LBS. PUMP PRESSURE. INVESTIGATE! THERE'S NOTHING ELSE LIKE IT!

Standard FMC Fog Fire Fighter. *A self-contained fire-fighting unit. Carries its own water supply and complete fire fighting equipment. Provides two guns of 30 gallons each at 600 lbs. nozzle pressure.*



FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 709 HAZEL ST., LANSING 4, MICH. • BEAN-CUTLER DIVISION, 409 JULIAN ST., SAN JOSE, CALIF.

PUMPS FOR OVER FIFTY YEARS

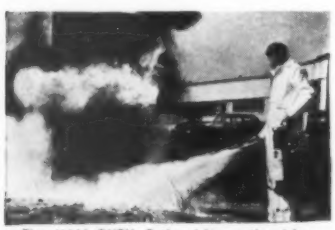
This 10x10' pit of flaming oil and gasoline was extinguished in 6 seconds by the "ALL-OUT" Fire Extinguisher.

to extinguish FIRE on the INDUSTRIAL FRONT

The workman who attacks fire with the new "ALL-OUT" Dry Chemical Extinguisher is *fully armed* to extinguish quickly both flammable liquids and fires in electrical equipment . . . *fully protected* against radiant heat and electrical shock.

The "ALL-OUT" Extinguisher discharges a stream of "ALL-OUT" Dry Chemical that instantly generates a dense, fire-smothering, heat-resisting cloud over a flaming area up to a distance of 18 feet. This chemical cloud—clean and harmless to the operator—will not scratch, stain, nor mar either highly polished surfaces or the moving parts of motors and machinery.

A non-conductor of electricity, "ALL-OUT" Dry Chemical is especially effective and safe on fires in heavy electrical equipment — motors, generators, condensers, cable ducts, etc.



The "ALL-OUT" Extinguisher extinguishes stubborn, hazardous running gasoline fires in a matter of seconds. Two seconds after this picture was exposed, this running gasoline fire was completely out.

Even though fire may strike in almost inaccessible places, "ALL-OUT" is sufficiently light to carry and operate by men or women workers under the most difficult circumstances.

IMPORTANT "ALL-OUT" FEATURES

Weighing approximately 37 lbs. fully charged, the "ALL-OUT" Extinguisher is ruggedly constructed and *easy to carry and operate* by men or women employees . . . larger opening into powder container, and exterior mounting of the 5½ oz. carbon dioxide cylinder permits *quick, on-the-spot recharging* without special equipment at the scene of fire . . . method of introducing carbon dioxide pressure into chemical chamber produces *heavier* and *denser cloud* of fire-killing "ALL-OUT" Dry Chemical . . . special formula of "ALL-OUT" Dry Chemical creates an insulating film on hot metal surfaces and *helps guard against re-flash* . . . fan-shaped nozzle causes chemical to be projected in a flat stream that *separates the flame* from the burning material . . . Squeeze-Grip nozzle gives *instantaneous* and *positive control*.

See The "ALL-OUT" Extinguisher Demonstrated. Write Today For Your Copy Of This New, Illustrated Folder, And The Name Of Your Local "ALL-OUT" Representative.

"ALL-OUT" *"Fatal to Flame"*

NATIONAL POWDER EXTINGUISHER
CORPORATION
50 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK

WARD LaFRANCE TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC

ELMIRA NEW YORK

MEMORANDUM TO THE ADVERTISING AGENCY

FROM: A. Ward LaFrance, Vice President
Great American Industries, Inc.

SUBJECT: POSTWAR FIRE APPARATUS

You know about the intensive developmental work on postwar fire apparatus which our engineers have been conducting, and you will be interested in the summary of hundreds of helpful replies to our questionnaire addressed to representative fire chiefs, who were good enough to assist us with their ideas. These replies are convincing evidence that we have been proceeding along the right lines.

I know your artists are itching to draw handsome pictures of super-streamlined postwar Ward LaFrance equipment, after looking over our engineering visuals -- but let's not attach too much importance to mere appearance. Fire apparatus has a vital job to perform, and fire protection people are as practical as the day is long.

When you have occasion to refer to postwar Ward LaFrance equipment, please make it clear that what we are shooting at is maximum fire-fighting ability per pound. That means motors and chassis designed specifically for fire-fighting purposes, the best possible arrangement of controls and connections, the most practical locations for hose reels and ladders, better seating accomodations for the crew, more carrying space for auxiliary equipment, greater safety for firemen, and ability to get into extinguishing action sooner, to mention but a few of the really important factors.

Fire departments are seriously hampered by inability to secure much-needed equipment. They not only want to know that better apparatus than ever is coming -- they want to know how soon. They will be glad to know how quickly we will return to full civilian production as soon as war demands have been met. And, by all means, urge them to consult us now. We can fill their needs much sooner if we can start now to plan for meeting the particular requirements of their communities.

A. Ward LaFrance.

A. Ward LaFrance.

GREAT AMERICAN INDUSTRIES, INC., GENERAL OFFICES, MERIDEN, CONNECTICUT
DIVISIONS
CONNECTICUT TELEPHONE & ELECTRIC DIVISION, MERIDEN, CONNECTICUT
WARD LaFRANCE TRUCK DIVISION, ELMIRA, N. Y.—FACTORY BRANCH, 139TH ST. & EASTERN BLVD., NEW YORK
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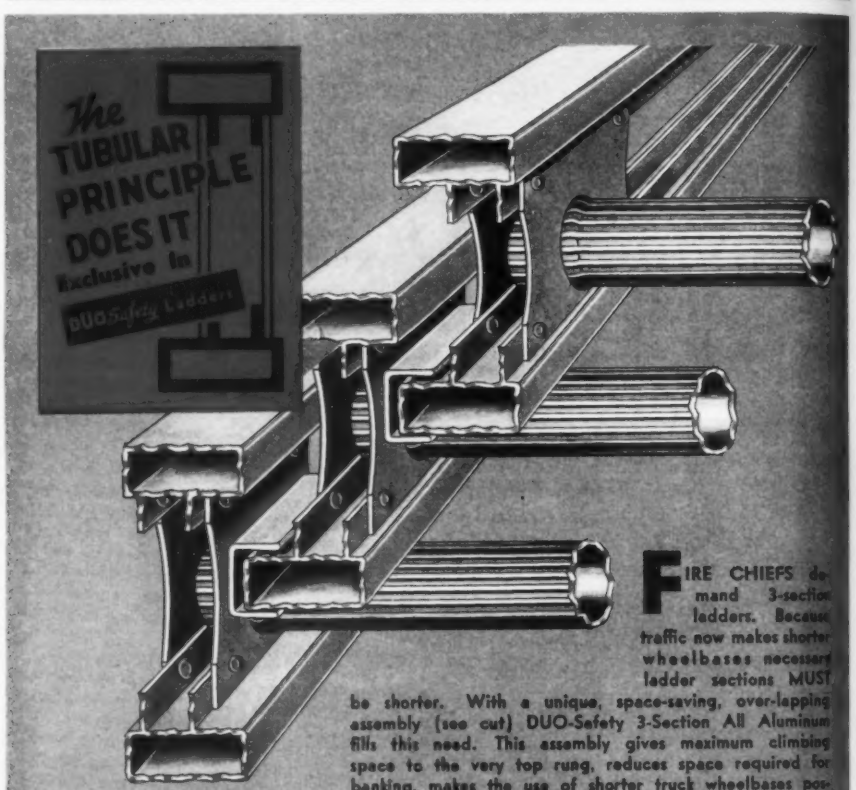
RIGHT! IT is STRONGER!

THREE-SECTION
SERIES 525-A

NEW DUO-SAFETY *All Aluminum* HAS EVERYTHING THE FIRE CHIEF DEMANDS OF LADDER EQUIPMENT



FIRE CHIEFS demand 3-section ladders. Because traffic now makes shorter wheelbases necessary ladder sections MUST be shorter. With a unique, space-saving, over-lapping assembly (see cut) DUO-Safety 3-Section All Aluminum fills this need. This assembly gives maximum climbing space to the very top rung, reduces space required for banking, makes the use of shorter truck wheelbases possible. And it does these things without the sacrifice of strength or light weight! DUO-Safety's exclusive Tubular Principle does it! This rectangular extruded Duralumin rail, together with other structural refinements, gives the fire chief everything he's looking for, and makes DUO-Safety All Aluminum the ladder hit of the year!

SEND NOW FOR ALUMINUM FIRE LADDER CATALOG 75A

Get full description of 1, 2 and 3 Section DUO-Safety All Aluminum Fire Ladders. Ask your supplier or write DUO-Safety for form 75A.

Sold by Leading Suppliers Everywhere; Canadian Distributors, Bickle-Seagrave, Ltd., Woodstock, Ontario

DUO-SAFETY LADDER CORP. — 809-811-813 NINTH STREET, OSHKOSH, WISCONSIN

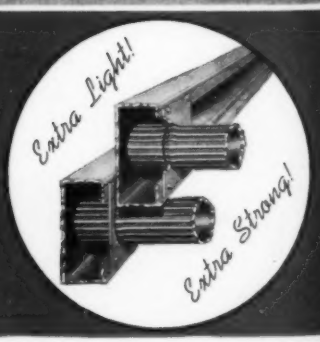
Also Makers of All-Wood Ladders and Compo-Wood-Aluminum Ladders

NOTE:

SERIES 700A CHANNEL CONSTRUCTION

This new Duo-Safety channel design is an outstanding development in light-weight pumper ladder equipment. All-aluminum (Duralumin) . . . all around husky construction gives you faultless quality and positive safety! Designed to replace the bulky old type solid side wood pumper ladders.

TWO SECTION Series 700 A



CAN'T CATCH or DRAG

KLEERLINE COUPLINGS

"KLEERLINE" Couplings are made by a firm with a reputation for precision manufacturing over a period of 30 years.

THESE modern streamlined couplings were designed and constructed with this principle in view. The smooth, rounded, streamlined design of KLEERLINE couplings, causes them to *"ride-over"* obstructions just as a sleigh runner might.

KLEERLINE couplings can't wear or tear the hose like the old-fashioned pin-lug couplings. Their clear-cut, sturdy threads make for easy handling and coupling at a time when speed is a *vital* factor.

The KLEERLINE special spanner will fit any other coupling you might have on your truck but *economy* and *safety* demand that you change all those old-fashioned couplings and replace them with KLEERLINES.

★ INQUIRIES INVITED FROM RESPONSIBLE DEALERS IN FIRE EQUIPMENT ★

FASTER STREAMLINED BETTER MODERN DESIGN

ANDERSON FIRE-FIGHTING EQUIPMENT COMPANY, INC.

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It will help if you will mention FIRE ENGINEERING *when writing advertisers*

FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor

Imminent?

AS this is written, the long awaited Invasion seems to be imminent and all the world is on edge.

● When we stop to think of the months of preparation that lie behind every move that is made, we are reminded of the comment of the returned soldier who warned:

"Don't get there fustest with the leastest!"

● These same pertinent words apply equally to the home-front job that you in the fire service are performing, don't they? You can't afford to get to a fire with apparatus and equipment inadequate to do the job!

● The manufacturer, too, has a responsibility, and it is the function of FIRE ENGINEERING to see that no one in the fire service gets there fustest with the leastest. Our editorial pages, and our advertising pages, can help equally.

The Publishers

FIRE ENGINEERING

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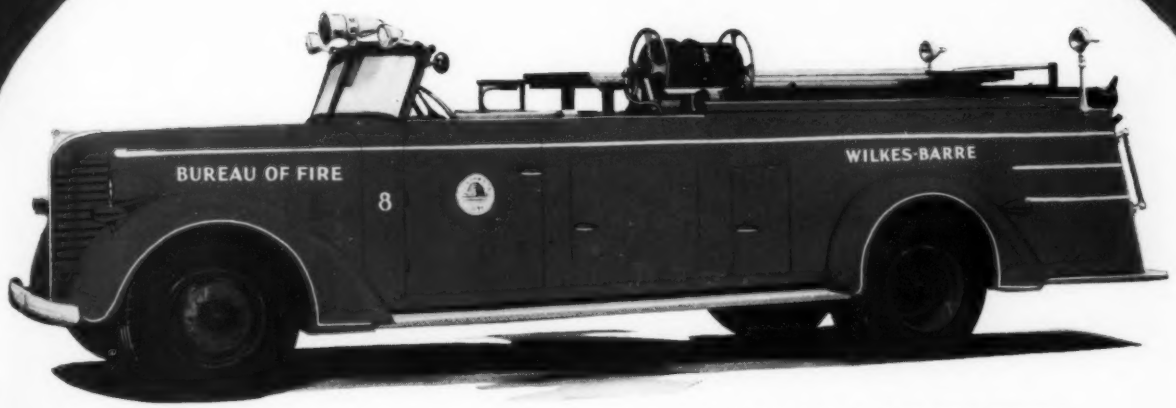
"Specialized Leadership"



Buffalo 750 G.P.M. "Invincible" Triple Combination recently completed for Wilkes-Barre, Pa.

SAFE

CREW RIDES INSIDE

BUFFALO FIRE APPLIANCE CORPORATION

BUFFALO . . . . NEW YORK

This Fire Protection

NOW AVAILABLE
For Immediate Shipment

•

THIS 15 POUND ALFITE FIRE EXTINGUISHER

When fire hits, these quick-acting carbon dioxide extinguishers will snuff it out in seconds. Carbon dioxide leaves no trace, does not damage delicate or intricate mechanism. Business may be resumed immediately.

Has Alfite Seat Valve . . . provides vibration-proof shut-off . . . can retain a part of the contents indefinitely.

No replacement parts required for recharging. Valve body of rugged naval brass forging. Discharge hose attached by sturdy 1½" coupling. Valve has built-in recoil eliminator and independent safety disc.

Anti-Statik discharge horn minimizes danger of shock from static electricity during operation.

ORDER NOW WHILE SUPPLY IS AVAILABLE

Approved by Underwriters' and Factory Mutual Laboratories

FOR CLASS B OR C FIRES

AMERICAN-LA FRANCE-FOAMITE CORPORATION

Most Complete Line of Fire-Fighting Equipment.

ELMIRA, NEW YORK U.S.A.

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SQUEEZ-GRIP

gives carbon dioxide a shot in the arm...

Carbon dioxide, always a fast non-damaging fire extinguishing agent for certain types of fires, is now stepped-up to terrific fire killing speed with the new C-O-TWO SQUEEZ-GRIP type valve for portable extinguishers. Before C-O-TWO engineers developed the SQUEEZ-GRIP valve the procedure when using a hand-wheel portable was: Pick up the extinguisher, carry it to the fire, then set it down and turn the wheel to open the valve, then pick up the portable again to extinguish the fire, then set down the portable and turn the hand wheel to close the valve. Slow and wasteful! With the SQUEEZ-GRIP valve there is no need to set the extinguisher down to operate it. You can release precious carbon dioxide gas as fast as you can close your hand. The squeeze of your hand plasters the fire—releasing the hand pressure stops the discharge of carbon dioxide.

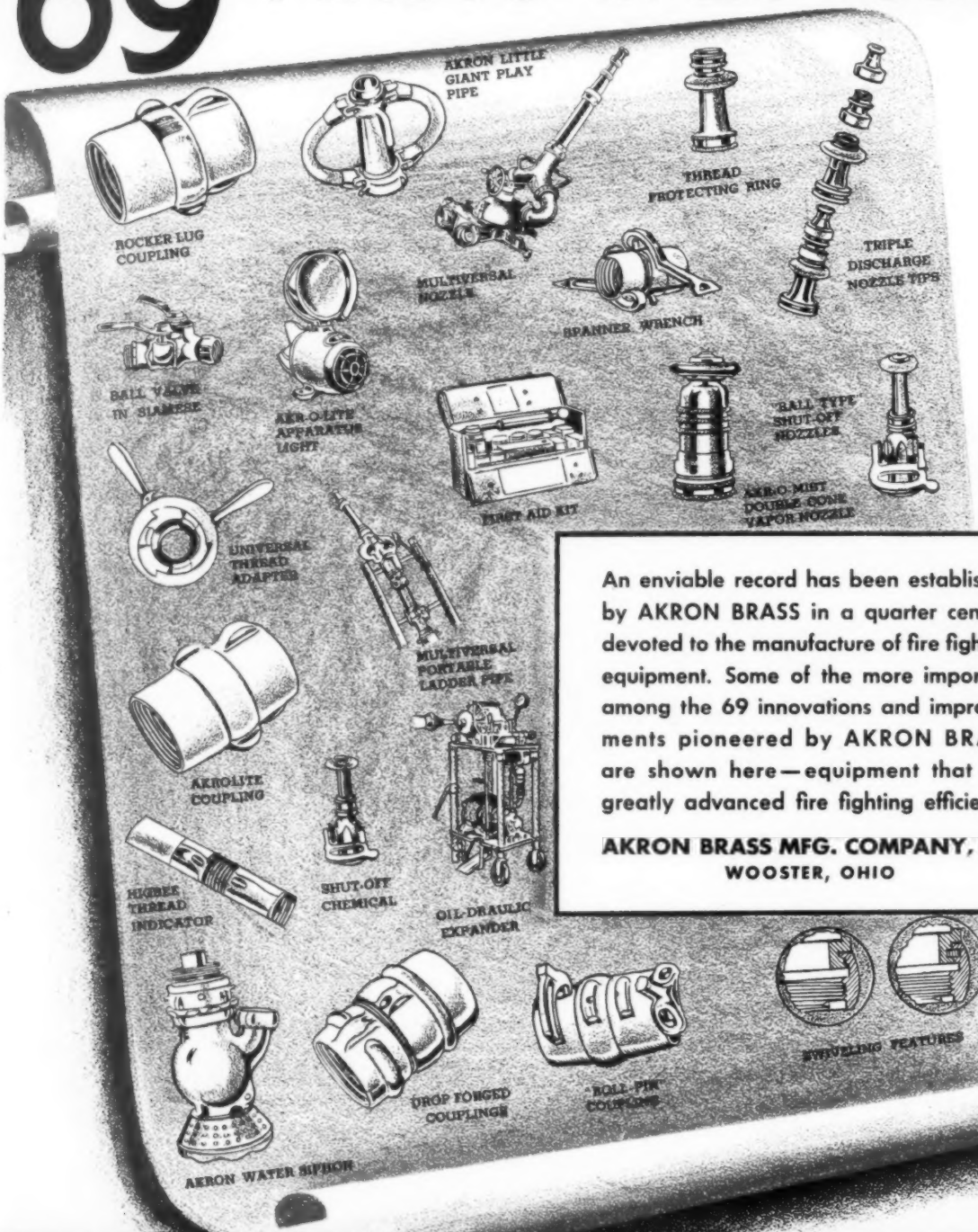
SQUEEZ-GRIP Saves Time and Gas, It's Safer, It's Faster.

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK 1, NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

69 "FIRSTS" in 25 Years!

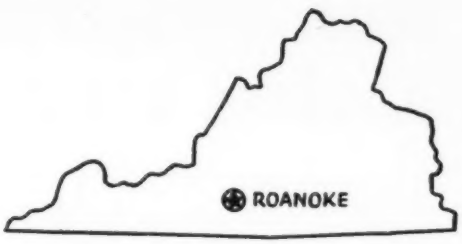


An enviable record has been established by AKRON BRASS in a quarter century devoted to the manufacture of fire fighting equipment. Some of the more important among the 69 innovations and improvements pioneered by AKRON BRASS are shown here—equipment that has greatly advanced fire fighting efficiency.

AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

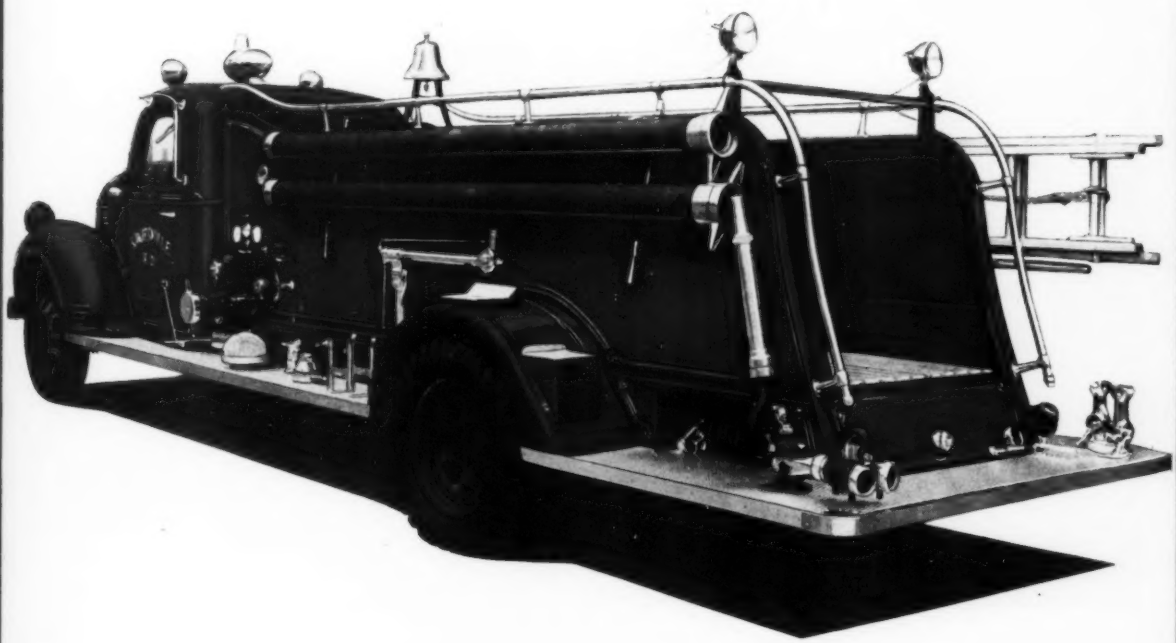
AKRON BRASS
FIRE FIGHTING EQUIPMENT

OREN



THE SOUTH'S ONLY FIRE APPARATUS MANUFACTURER!

Equip your department with an OREN! for modern equipment!



A Triple Combination Unit Built for Iredell County and Statesville, N. C.

★ **OREN BUILDS A COMPLETE LINE OF FIRE TRUCKS, WRITE FOR DETAILS** ★

OREN

FIRE APPARATUS

OREN FIRE APPARATUS COMPANY

ROANOKE, VIRGINIA

ARMY NAVY

"With RING-FREE, starting troubles are a thing of the past"

Quoting THE CITY OF LA HABRA, California: ". . . the Fire Chief removed the pan from our fire truck and discovered it to be coated with sludge. Prior to that time there had been difficulty in starting the motor, and this slowness in starting was a great handicap in making a quick get away to a fire. Our Chief, who had used RING-FREE Motor Oil in his private car, recommended a change to RING-FREE in our fire equipment. This was done and starting troubles are things of the past."

As an aid to easy starting, Macmillan RING-FREE Motor Oil is the choice of many Fire Chiefs. The long clinging ability of RING-FREE keeps the lubricant on idle motor parts—keeps it there to do its job immediately when a quick start is wanted. RING-FREE's rapid penetrating quality, resistance to dilution and high film strength combine to reduce friction *fast!*

Speeding to a fire, the high heat resistance of RING-FREE also enters into the continued fight against motor friction. More usable horsepower is delivered to the drive shaft and motor wear is reduced. Carbon is *removed* while the motor runs!

Trial and comparison of RING-FREE on the basis of complete records of operating performance and economy is welcomed by Macmillan representatives.

MACMILLAN RING-FREE MOTOR OIL

MACMILLAN PETROLEUM CORPORATION

50 W. 50th Street, New York 20 • 624 S. Michigan Avenue, Chicago 5 • 530 W. 6th Street, Los Angeles 14

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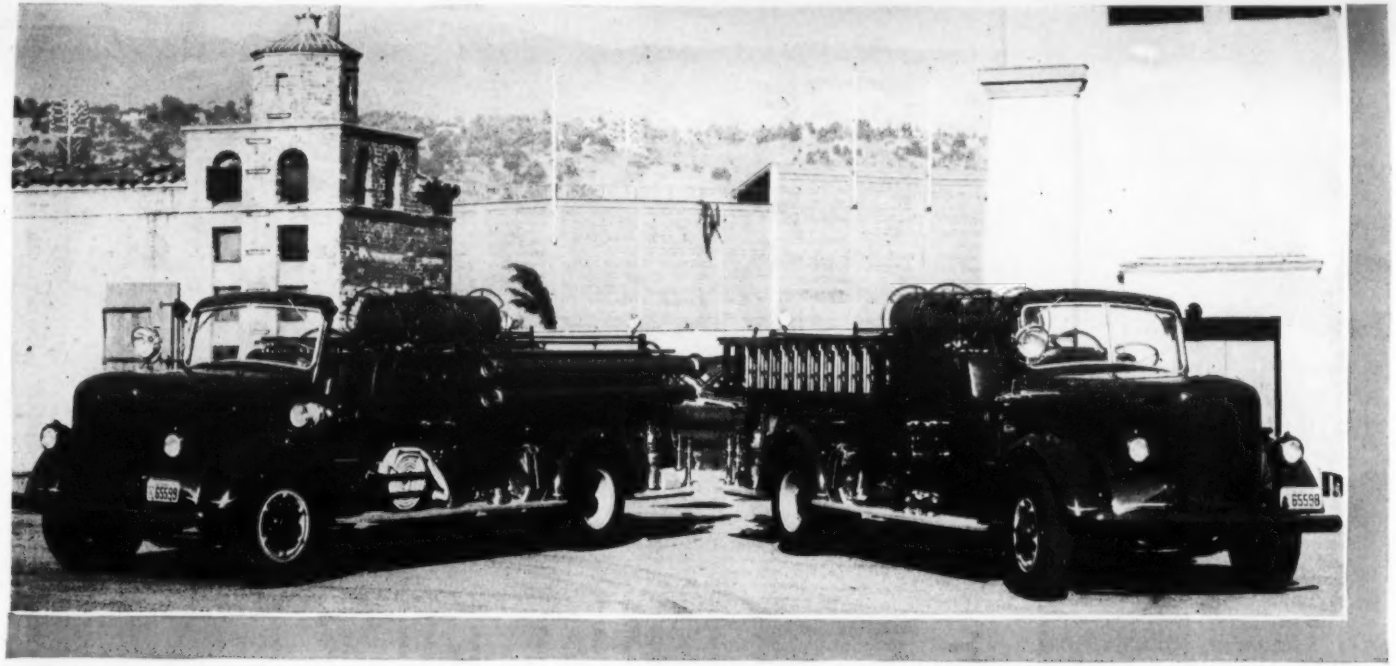
REDUCES WEAR BY REDUCING FRICTION



Mack Type 80 pumpers of the Santa Barbara, California, Fire Department. A third converted aerial Mack is also in service, and a fourth, a Mack booster tank unit, is on order.

When you get hold of something good, you want more of the same. That's why firemen of Santa Barbara, California, are adding still another Mack fire truck to the three Macks they've got in operation now. They know from experience that you can't beat Mack!

MACK MANUFACTURING CORPORATION, FIRE ENGINE DIVISION
EMPIRE STATE BUILDING, NEW YORK 1, N. Y.

ARMY E NAVY
BUY WAR BONDS

IF YOU'VE GOT A MACK, YOU'RE LUCKY . . . IF YOU PLAN TO GET ONE, YOU'RE WISE!

Mack
FIRE APPARATUS

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

Kindly mention FIRE ENGINEERING *when writing advertisers*

Twelve Years of Experience at
FORT WAYNE
Chief Carter Bowser, of Ft. Wayne, Indiana
★
Below — Fort Wayne's two E & J equipped Rescue Squads

Wins Preference for The E & J RESUSCITATOR INHALATOR and ASPIRATOR

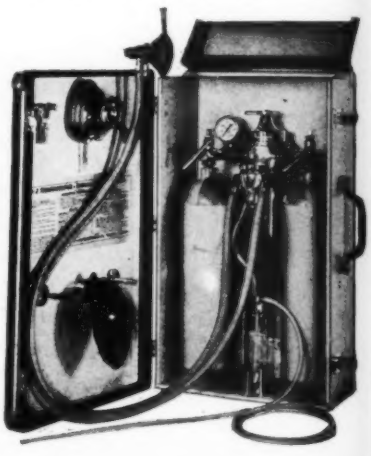
THEY believe in doing things right at Fort Wayne, Ind. Nothing is left to chance or guesswork, and that applies particularly to the Fire Department which, under the progressive and capable leadership of Chief Carter Bowser, has become known for its high efficiency. Chief Bowser, who has been a fire fighter for nearly 25 years, having worked his way up from the bottom, is now President of the Indiana Fire Chiefs Assn., and at one time also headed the Indiana State Firemen's Assn. Thus he knows his stuff.

Chief Bowser takes special pride in his two rescue squads, both of which are E & J equipped. The first E & J resuscitator was bought in 1931, more than twelve years ago. As the result of its performance two more were later added, the last one in December 1943. The records show that hundreds of lives have been saved.

When it comes to judging the value of any equipment there can be no better determining factor than performance over a period of years. That Fort Wayne and so many other cities throughout the country prefer the E & J after long experience, is the soundest kind of proof of E & J superiority.

★ *For further information write any of our distributors listed below.* ★

First Choice in First Aid



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Pioneers and Specialists in Mechanical Artificial Respiration

★

The Seagrave Safety Steel Aerial Ladder is the ultimate in safety construction. . . . The main beams of this ladder are hollow I-Beam rust resisting alloy steel. . . . There are no bolts, holes or rivets to weaken the structure. . . . Every inch of the Seagrave Aerial ladder is thoroughly welded to provide greater strength.

Each extension section of this ladder locks into place with special Seagrave locks making possible the converting of a three section ladder into a single rigid unit.

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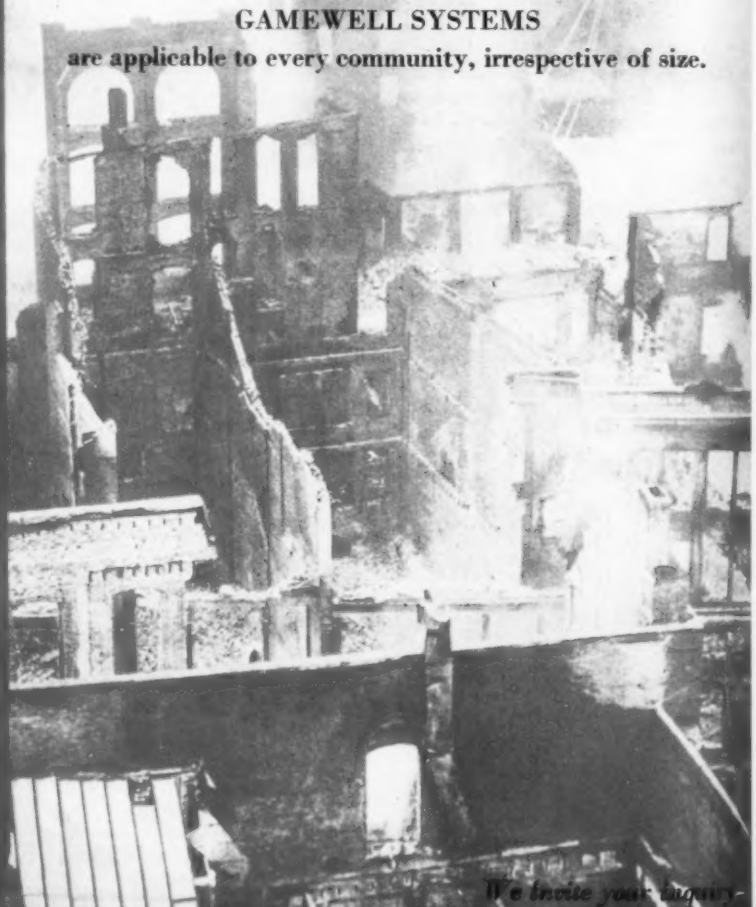

We invite your inquiry

THE GAMEWELL COMPANY
Newton Upper Falls, Massachusetts

MAY, 1944

FIRE ENGINEERING

VOL. 97. No. 5

With the Editor

Army and Navy Accept Fire Department Help

The Fire Department of San Francisco had protested vigorously from time to time against the practice of the Army and Navy authorities in erecting large structures within the city limits which omitted vital fire protection features. But little progress was made, for these authorities held that the Army and Navy were beyond control of any municipal building codes. The result was the erection of a number of large structures which possessed serious defects from the standpoint of fire safety.

To make matters worse, fire department inspectors were denied all access to Army and Navy buildings.

Recently a large Army warehouse at San Francisco, nearing completion, was destroyed by fire. The fire department had insisted upon firebreaks in the 600x180-foot structure, for the plans called for none. The Army cooperated to the extent of constructing them of two-ply boards with plaster covering. The building represented a further violation of local fire laws because of its huge size.

Since this fire, and largely as a result of the airing given the controversy through the press, the Army and Navy officials have agreed to cooperate with the fire department. Representatives of the Army and Navy stated that hereafter city inspectors will be given access to all buildings constructed or remodeled for military purposes. In addition, it was agreed that the city will be notified when any new construction or remodeling is contemplated, and that the municipal departments concerned will be invited to assist in the making of plans for such work.

Chief Albert J. Sullivan of San Francisco is to be congratulated on winning out in a controversy which has not involved his city alone; similar situations have been encountered throughout the country.

A precedent has been set which should prove helpful in the future to other fire departments that are expected to protect Army and Navy properties.

State OCD Upsets Fire Training Program

At a meeting of the New York State War Council, held March 9, 1944, action was taken which abolished the Office of War Training, which office included the very effective fire department training program of the state.

At a subsequent conference, the State Director of Civilian Protection announced that the fire training program was to be transferred to his office.

It is not surprising that the entire crew of instructors, consisting of five capable fire chiefs, gave notice that they would not serve under the new set-up.

It seems a pity to us that the state OCD, apparently in order to justify its perpetuance, must reach out and grasp activities on which it has no claim; for which it is not qualified. In addition, it apparently does not consider firemanic training a vital defense measure, for it plans to cut the force of instructors from five to two.

Under the former arrangement, an effective training program was being carried out. Under the OCD, typical OCD wrangling may be expected. That organization has not the qualifications, the experience nor the confidence of the fire service to do a good job.

Fred. Sheppard

Suggestions for Taking Examinations

By JOHN I. LUSK*

THE following pages present a plan for the person who wants to do his best in examinations for promotion. It is particularly arranged for the fireman of experience who "knows his stuff" but finds difficulty in putting what he knows on paper in the written examination. The plan has been tried out and it works well. The net result of its mastery is better controlled and more efficient expenditure of effort in those crucial moments of answering questions for the written exam.

Examinations are always easier for the person being examined when thought and reason are applied in the preparation preceding and in the actual taking of the examination. Two types of persons, those who are prepared and those who are not prepared, present themselves for examination.

Since competitive examinations are often a most important phase of the qualifying process by which an individual secures advancement in his own occupation, a need exists to know how to be one of those who are prepared. This fact of promotion by examination applies in many fields of private employment and quite uniformly in civil service and general government employment.

In the service of municipal fire departments, the problem of preparation is a difficult one because:

a. There is a great range of subject matter which may be involved in the ordinary examination. This subject matter is rarely set up within definite limits for the purpose of studying for examination.

b. The style or pattern of question used in such examinations has a form which formal schooling has not taught but which the examinee should know in order to analyze the question and have a planned pattern for stating his answer.

To be fully prepared, one must secure mastery of the facts and become able to answer all questions about the facts accurately and clearly.

A review of several thousand questions appearing in promotional examinations for firemen gives a basis for the conclusion that a general listing such as follows is merely a start toward an outline of topics which the prospective candidate may use as a study outline:

Question Subjects in Promotional Examinations for Firemen

Auxiliary Departments
Alarm Systems
Apparatus
  Inventory, etc.
  Description
  Use
Arson
Behavior of Fire
Building Construction
Back Drafts
Care of Equipment
Chemicals
Chemistry of Fire
Classes of Fire
Departmental Organization
Departmental Rules
Dust Explosions
Equipment Items
Extinguishers (all types)
Exposures
Explosives—chemical
Fire-fighting Procedures
Fire Problems
Fire Prevention
Fire Streams
Flammable Liquids
Forcible Entry
Hazards—Life
Hazard—Property
Hydraulics
Hydrants
Inventories
Inspection
First Aid Practices
Knots and Hitches
Laws and Ordinances
Losses
Lights and Lighting
Masks
Mutual Aid
Oil Burners
Oils and Greases
Permits—Fire Dept.—others
Personnel Requirements
Qualifications
Pumping
Relaying Water
Refrigerants
Records
Salvage
Safety Practices
Spray Nozzles
Sprinkler System
Training in Fire Depts.
Traffic Regulations
Ventilation
Water Supplies
Wood & Brush Fires

Each man should make up his own list, supplementing it with new topical items as they occur to him. Each of the topics listed here may be subdivided and every item have an indicated reference source for authoritative treatment of the subject matter. For example: Practical Rules for Obtaining Good Fire Streams—A good reference is found in the handbook, "Fire Engine Tests and Fire Streams," issued by the National Board of Fire Underwriters, Page 22. To be of most use, this listing with references must be done thoroughly. It may well be done by a card catalogue scheme.

F

Subject
Fire Streams

Practical Rules for Obtaining Good Fire Streams

References:

Handbook of the National Board of Fire Underwriters, N. Y.
"Fire Engine Tests and Fire Streams Tables," Page 22

(Notes on reverse side. Yes——— No—x—)

Suggested Card Listing for Question Subjects

Card Catalogue Helpful

Each man should make up his own list but he may never do so until he has seen its advantage in several samples. This he can do by visiting his public library and there examining the card catalogue system. If he will explain his need, the librarian will be glad to help him in the initial stages. The cards usually used are inexpensive and easily obtained. Each may carry an appropriate heading such as is illustrated in the above example. If "quick" notes on the topic are wanted, they may be written on the reverse side of the card in which case "Yes" would be checked rather than "No" as shown on the face side of the example shown. Small indicating tabs, similar to those used in library work, will add to an orderly arrangement of the cards as well as as to their usefulness.

Experience in fire department service brings to the alert man a practical knowledge of these various topics. That practical knowledge, however, should be classified and organized. The greatest handicap of experience in the role of teacher is that experience alone does *not* classify and does *not* organize the knowledge it furnishes a man. In our school days all of us have secured our training in classified subjects, as for example, "Arithmetic." Each classified subject has been organized in a learning order; for example, Subject, "Mathematics" = Notation, whole numbers, common fractions, decimal fractions, mixed numbers, etc. The list of fire fighting topics can at least help the fireman to study a classified list which he may organize in any manner which will best suit his learning situation. Study in this manner will bring about a routine wherein such reference books as are available may be used to better advantage and the observations of daily experience may be more intelligently directed to the desired result.

Question Pattern Forms

In the review of the questions already mentioned, it was apparent that exami-

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nation questions take certain definite patterns and, therefore, may be answered by pattern answers. Every single question could be classified under one of the following headings.

The Question Patterns

1. Questions requiring a list of items.
2. Questions requiring a statement of a law or ruling or ordinance.
3. Questions requiring a statement of procedure.
4. Questions requiring a solution of a problem.
5. Questions requiring a definition.
6. Questions requiring a description of an object.

The fact that there is a pattern should help a man in his preparation in a very concrete way. As he studies his own collection of questions from former examinations, he should determine the pattern classification of each question and formulate his answer accordingly. Thus, with the following samples taken from actual examinations, we may illustrate the manner of using the method of study outlined:

Sample Questions

I. What permits are isued by the chief of your town's fire department?

II. What are the provisions of the state law relative to fire drills in schools (Massachusetts)?

III. How should the face piece of an all-service canister gas mask be sterilized after use at a fire when commercial sterilizing equipment is not available?

IV. An engine at 120 lbs. pressure is pumping through 400 ft. 2½" hose with a 1¼" nozzle. What is the pressure at the nozzle?

V. What is arson?

VI. Describe a Baker Cellar Pipe.

Examining each question in turn, it will be found that:

Question I. (What permits are issued by the chief of your town's fire department?) is a question requiring a listing of items — in this case, a listing of permits.

Question II. (What are the provisions of the state law relative to fire drills in schools [Massachusetts]?) is a question requiring a statement of law—in this case, from the state laws.

Question III. (How should the face piece of an all-service canister gas mask be sterilized after use at a fire when commercial sterilizing equipment is not available?) is a question requiring a statement of procedure — in this case, caring for equipment.

Question IV. (An engine at 120 lbs. pressure is pumping through 400 ft. of 2½" hose with a 1¼" nozzle. What is the pressure at the nozzle?) is a question requiring a problem solution—in this case, a hydraulics problem.

Question V. (What is arson?) is a question requiring a definition—in this case, a technical term.

Question VI. (Describe a Baker Cellar Pipe.) is a form of question requiring a description—in this case, a piece of equipment.

Now, having determined the classification of the question, the person will need an answer pattern for each one of the six varying question patterns. They are as follows:

For Question Pattern I—Listing

The answer should consist of two things. First, it should include a statement identifying the class of items to be listed. Secondly, it should have the listing of items. The listing is best arranged in some particular order—e.g., alphabetical order, numerical order, order of occurrence, largest to smallest, most important to least important.

For Question Pattern II—Law

The answer for the law question should have the following elements:

1. Statement of the law by name.
2. Statement showing the law to be a federal or state legislative act, or an official executive ruling, or a local ordinance, giving the name of the body (Congress — Legislature — Department, etc.) originating the law or ruling.
3. A quote of the wording, if short, otherwise a statement covering the general provisions.
4. A statement telling what office or officer administers the law.
5. A statement naming the enforcing agencies, if any.

For Question Pattern III—Procedure

When a procedure is to be stated in an answer, the answer should include:

1. A statement disclosing the general nature of the procedure being written up.
2. The actions, one by one, which must be performed to carry out the procedure. An order of occurrence should be followed and each step should be amplified by whatever discussion and explanation is needed to make the step clear. A good outline for accomplishing the purpose in mind is this, applied to the sample question:

Manual: He does it.	Mental: Key Points
Step 1. Disconnect & remove canister.	1. How to do it. Care to be exercised.
2. Prepare solution.	2. Of what it consists. How much.
3.	3.

It will help one cover all the points which should be covered in the answer and in the order in which each should be covered. Arranged in the form of a running account, the answer built from this outline will be a direct, lucid account of the action and thought of the procedure in question.

For Question Pattern IV—Problem

The "problem" is old in educational work. The most durable and satisfactory pattern for the problem answer is as follows:

1. State what is required.
2. State formula or basic rule for solution.
3. Present work of solution clearly.
4. Set off specific answer and so mark it.

For Question Pattern V—Definition

The definition answer needs more than just the words of definition to be complete.

These should be included in the answer.

1. A statement naming the thing defined.
2. A wording of the definition itself covering class and particular qualities.
3. A statement concerning the source of the definition.

This source is legal if taken directly from a statute or an ordinance, or it may be a purely arbitrary definition from some source of recognized authority. If the definition is either of these, the general statement of source strengthens the definition. In case the definition is neither, no additional statement is needed.

For Question Pattern VI—Description

Description is a very common part of writing or talking. In the description called for in examination, the goal is exactness and completeness. Every description answer should cover the following:

1. A statement naming the thing defined.
2. The description proper, giving details of:
   - Materials.
   - Size—exact or approximate.
   - Construction (shape and the general manner in which the object is put together).
   - Finish—how it is made to look well, etc.
   - Use—its main purposes and capacities.

It has been stated in these pages that all questions may be classified under one of the headings given. This is true, but it must be recognized on the other hand that a question numbered as a single question may have two or more parts, and the classification, therefore, may have to be made on a combination basis. This will cause no difficulty if each part of the question is properly classified and the correct pattern applied in the answer. For example: Describe a foam generator and tell how it is operated. This is really two questions—first, requiring a description and second, requiring a statement of procedure.

In the examples used in this article, only the most simple have been selected to illustrate the principles. The more difficult questions to be found in the examinations, however, yield to the application of the principles quite as effectively.

The "patterns" should be used with the idea of covering each detail. It is not necessary to follow the order, in which the detail has been presented for each pattern—just be sure to get them all into the answer.

Practice and drill are required to gain skill in classifying the questions. It is recommended that for a time in the course of preparation, one should just classify the questions and not formulate the answers. Some checking of judgment is needed and, if possible to do so, have another person check the classification. This process will help one to memorize the six types of classification.

The next step, of course, is practice in using the answer pattern. Drill is essential both to memorize the patterns and to become proficient in their use. Subject matter can be checked in the reference sources at the same time.

Check these answers to the six questions used as examples against the answer patterns outlined:

Question I. What permits are issued by the chief of your town's fire department?

Answer: Permits issued by the Chief

of the Fire Department in my town are as follows:

1. Permits for the installation of oil burners and storage tanks therefor.
2. Permits for the storage, use, and handling of petroleum products and of all inflammable and dangerous materials.
3. Permits for the storage and sale of fireworks.
4. Permits for the removal or discontinuance of fire protective equipment such as sprinklers, stand pipes, hydrants, or water mains.
5. Permits for the removal or relocation of any tank which has contained gasoline.
6. Permits for the storage, handling, or use of explosives.

Check: Does the answer include a statement identifying the class of items to be listed? Does it have a full and well organized listing of the items? What is the order of listing?

Question II. What are the provisions of the state law relative to fire drills in schools (Massachusetts)?

Answer: The General Laws of the Commonwealth (Massachusetts) in Chapter 148, Section 28, Subdivision J, contain provisions relative to fire drills in schools. This chapter deals with Fire Prevention and is administered by the Department of Public Safety. Section 28 provides that, "The chief of the Fire Department shall make orders or rules . . . Requiring and regulating fire drills for employees of hospitals, theatres, and other places of public amusement, and in public and private schools."

Check: Is there a statement of the law by name? Does the answer indicate the legislating body? Does it tell who is responsible for the administration of the law? Does it in "quotes" or in statement give the main provisions of the law? Does it name any enforcement agency or does it need to do so?

Question III. How should the face piece of an all-service canister gas mask be sterilized after use at a fire when commercial sterilizing equipment is not available?

Answer: The following is an accepted practice for sterilizing the face piece of a mask:

1. The canister is removed during the sterilizing process.
2. The metal and rubber parts of the face piece are washed thoroughly with warm water and soap. Yellow laundry soap is good for this purpose.
3. The metal and rubber parts are then sterilized by immersing them in a solution consisting of one part of a 40 per cent formaldehyde solution and nine parts of water, or a solution of 2 per cent creosol or lysol.
4. The metal and rubber parts should be thoroughly rinsed in clear water and hung up where they will dry fairly quickly. Do not hang exposed to sun as this deteriorates the rubber material quickly.
5. Attach canister and check mask in for use.

Check: Does the answer have a statement disclosing the procedure being written up? Does it present the actions, in their order, which must be carried out to complete the procedure? Does it have the key points of information and thought which must be considered in performing the task?

Question IV. An engine at 120 lbs. pressure is pumping through 400 ft. of 2½" hose with a 1¼" nozzle. What is the pressure at the nozzle?

Answer: A figure representing the nozzle pressure of a stream is required. The formula is Nozzle Pessure = Eng. Pressure ÷ (1.1 + KL) where K = factor for tip size, L = No. of lengths of hose; 1.1 = a standard factor.

Work:

$$\frac{120}{(1.1 + 248 \times 8)} = 120 \div 3.084 = 38.9$$

Ans. = N. P. = 39 lbs.

	.248
	× 8
	1.984
	1.1
	3.084
	38.9
3.084.)	120.000
	92 52
	27 480
	24 672
	2 8080
	2 7756
	324

Check: Does the answer state what is required? Does it give the formula? Does it show the work? Does it set off and present the figured answer?

Question V. What is Arson?

Answer: A defintion of Arson from Webster's Unabridged Dictionary is as follows:

"Arson is the malicious firing of any building, agricultural produce, ship or other property, belonging to another, or one's own property with the intent to defraud an insurance company."

Check: Does the answer name the thing to be defined? Does it state a full definition? Is there any statement to reveal the source of authority for the definition?

Question V. Describe a Baker Cellar Pipe.

Answer: A Baker Cellar Pipe is made up of two sections of metal pipes and a swivel nozzle. The pipes are connected at right angles and the swivel nozzle will operate by control in a complete circle and at any angle from about 70° upward. The nozzle is controlled by means of a rod connected to it and running up beside the verticle pipe to a swivel. The swivel is equipped with a handle which enables the operator to exercise control somewhat removed from the hole through which the Cellar Pipe is used. The pipe is fitted with two folding legs or feet, to give a secure setting when in use. The Baker Cellar Pipe has a shut-off device, the necessary fittings for connection to a line and, in recent manufacture, tips from ¼" to 1½" sizes. It is of a size easily handled by one man with the verticle pipes of a length to be placed through from the floor above to the cellar. It is finished to look well and resist rust in manner similar to that used for tips and nozzles.

MEMORANDUM

TO: John Smith, Mayor of Mytown DATE: January 31, 1944

FROM: John Doe

SUBJECT: Overhaul

There exists in some communities a disposition to think that, because a local fire department has not let a fire reach conflagration proportions in recent years, it needs no addition, replacement, or modernization of its apparatus and equipment. This is a dangerous as well as an unsound conclusion.

Most departments can successfully fight one large fire at a time. There is always the possibility of several large fires occuring simultaneously. The busier the community, the greater is this risk. Mutual aid is not the whole answer. Equipment must be ample, of modern standards in usefulness, and in first-class condition. There must be reserves.

It would be well, at this time, for the officials of Mytown to survey our local situation. They should then develop and carry out a plan to discard unserviceable apparatus, modernize what remains, and acquire all additional items that are needed to enable the Fire Department to be fully ready to cope with potential contingencies of fire in Mytown.

/s/ JOHN DOE

Chief, Mytown Fire Department

CRH

Suggested Report Writing for Civil Service Examination

Check: Does the answer include a statement naming the thing described? Does the description proper give details of material, size, construction, finish and use?

These methods of study are good for study preparation and at the examination time, too:

1. Read each question and classify it according to the six question pattern types.
2. Write your answer to each question with the pattern answer for that question.
3. After you have written your answer, check it by the plan illustrated above.

Now for some general suggestions for the time of the actual examination:

1. Go into the examination with the idea that you have the same chance for success that your competitors have.
2. Control your natural reactions to nervous tension insofar as you are able to do so. Learn how beforehand.
3. Present your knowledge and ideas in brief plain words. Have any numbers accurate and in their proper arrangement of relationships. Volume and "big words" are out of place in examination answers.
4. No matter how difficult the task may seem at the moment, don't quit, at least try, for a quitter is never a leader of men. The examination is given to find "leaders of men."

Report and Letter Writing for Civil Service Promotional Examinations in Fire Departments

In some examinations the candidates are asked to write a letter or report on a subject announced at the time of the examination. Three things are required for a good report or letter:

A. Simple and clear statements of the candidate's ideas and knowledge of the subject in the body of the report or letter. Know what you want to write and write it as simply as possible.

B. The correct forms for heading, salutation, and closing features of letter, or the forms which serve the same purpose in a report. (See following pages for examples.)

C. A strict compliance with any special directions which are a part of the examination routine. For example, you may be told:

1. To address your letter or report to a certain individual. Be sure to do this as directed.
2. To head your letter or report with a heading address which will not be your own. This makes it possible for your papers to be marked without the examiner knowing whose papers he is marking. Be sure to follow the directions given you.

Suggestions for Writing Report or Letter

The headings, salutations, closing, and signatures are of standard forms. Therefore, write the heading and other standard items in their proper positions immediately after you have determined whether you are required to write in the form of a letter or a report.

Allow one line for every seven words of the total approximate number you are told to write for the body of the letter or report. This takes only the briefest of time and gets one thing off your mind.

Now, deliberately take three or four minutes by the clock to line up the subject matter in an order that will be satisfactory. Do this in numbered topics. Put them down first and then number items.

For example, you find on your examination this direction: As chief of your department, write a letter of approximately 150 words to Mr. John Smith, Mayor of Mytown, New York, telling him of the need to overhaul the Fire Department equipment.

Topics

Survey and improvement of present setup needed.

No recent conflagration is no proof that there will not be one.

Mutual aid not the answer—need local reserve.

Now you know that you will use three ideas in the body of the letter. The best order for the three is probably:

1. No recent conflagration—no proof.
2. Mutual aid—not the answer—but a reserve.
3. Survey and improvement needed.

You now write briefly to each of these three points.

Use the outline which you have put on extra paper to write the body of the letter. (Same for report or memorandum.)

A report or memorandum would be developed in the same way and with the same body.

Author's Note: Captain F. Langton of the Springfield, Mass., Fire Department was extremely helpful in the preparation and criticism of the material. The Massachusetts Fire Department Instructors Association meetings was the source of the general inspiration of the article.

Blackout Panels Removed from New York Fire Stations

Except in those parts of department buildings visible from the sea in the Eighth, Twelfth and Thirteenth Divisions, the removal of all blackout panels has been authorized by the New York Fire Department.

The panels, marked with numbers corresponding to numbers to be placed on the openings for which they are provided, are placed conveniently nearby for quick action.

In the event of the transmission of Signal 13-3-13, an air raid, or ordered blackout at night, the illumination of quarters will be discontinued for the period involved.

The minimized use of electric current, in quarters, during daylight periods, is the primary purpose of this order.

Fire Department Headquarters
100 Pleasant Street
Mytown, New York
January 31, 1944

Mr. John Smith, Mayor
City of Mytown
Room 25, City Hall
Mytown, New York

Dear Sir:

There exists in some communities a disposition to think that, because a local fire department has not let a fire reach conflagration proportions in recent years, it needs no addition, replacement, or modernization of its apparatus and equipment. This is a dangerous as well as an unsound conclusion.

Most departments can successfully fight one large fire at a time. There is always the possibility of several large fires occuring simultaneously. The busier the community, the greater is this risk. Mutual aid is not the whole answer. Equipment must be ample, of modern standards in usefulness, and in first-class condition. There must be reserves.

It would be well, at this time, for the officials of Mytown to survey our local situation. They should then develop and carry out a plan to discard unserviceable apparatus, modernize what remains, and acquire all additional items that are needed to enable the Fire Department to be fully ready to cope with potential contingencies of fire in Mytown.

Yours respectfully,

/s/ JOHN DOE

Chief, Mytown Fire Department

JIL:CRH

Suggested Letter to Tell of Need for Overhauling Equipment

Violation of Local Fire Laws Results in Loss of Warehouse

Quartermaster Warehouse Completely Wrecked by Fast-Travelling Blaze; Improper Fire-Stopping Aids Fire Spread

By BOB GREENOCK

SAN FRANCISCO'S third major fire in ten days on April 5 caused $300,000 damage and injured seventeen persons, thirteen of them firemen, when it whipped through a one-story frame building, 600 by 180 feet, that was to have been used by the Army Quartermaster Corps as a cold storage warehouse.

The warehouse, one of six units, had been constructed with ODT funds and was to have been turned over to the Quartermaster Corps at the end of the month for storage of export Government freight of the Army, Navy and lend-lease. The huge structure, situated just south of the channel between Fourth and Fifth Streets and adjacent to the Southern Pacific's Mission Bay freight yards and warehouses, was nearing completion.

Twenty-four employes of a subcontractor were working in the southeast corner of the huge building, dipping slabs of cork in boiling tar and installing them as insulation. A false ceiling, to aid in providing insulation against heat, ran the entire length of the building.

Although workmen later told Fire Marshal Frank Kelly they thought an explosion had occurred, Kelly said he was convinced that the tar used had been overheated and that fumes had been ignited statically. He pointed out that in order to get the right consistency the tar was heated to 525 to 540 degrees, and that some of it may have been overheated, causing it to flash when it came in contact with fumes in the room.

Only three days previous firemen had been called to extinguish a fire in some debris after a tarpot had ignited it. The tarpots were ordered out of the building, and the men warned of the danger involved.

Firebreaks Constructed of Plaster-Covered Wood

Fire Marshal Kelly said later that the only firebreaks in the huge building—itself a violation of all local fire laws because of its size—had been constructed of two thicknesses of wood with a plaster coating and that fire-doors consisted of three thicknesses, covered with tin.

Kelly said the original plans called for no such firebreaks or doors and that it was only after vociferous protests by himself and Chief Sullivan that the two breaks were installed and a wet standpipe system installed in other buildings of the group.

First-arriving firemen were handicapped slightly for a short time due to a shutdown of main feeding the newly installed hydrants in the area from the Fourth Street main but Fire Department hydrant men soon had the valve open and water was available in all of the hydrants surrounding the building.

Coast Guardsmen from the Fire Battalion were handicapped in their efforts on several occasions when the single jacketed hose provided by the Government broke or sprang leaks. On two occasions lines had to be shut down and the broken lengths removed; hose jackets were used in other instances.

The guardsmen, well-trained, relieved firemen on the windward side of the fire from time to time because of the terrific dose of smoke and heat they were forced to take.

First alarm came from Box 2226, Fourth and Channel (south side) at 4:24 p.m. bringing in wartime response of two engines, a truck, chemical, battalion chief and a division chief. A vicinity box, 2225, Fourth and Berry Streets, pulled a minute later, brought in one additional engine company. To the south, someone else saw the billowing smoke and pulled Box 2264 at Sixth and Hooper Streets.

District a Maze of Plant Properties

The entire district south of the channel is a maze of freight yards, lumber yards and plant properties of various kinds. It is difficult to get into and apparatus from the north or west is often forced to detour many blocks out of the way to effectuate entrance to the various boxes in the district.

Although only two blocks away, 2264 is not considered a vicinity box because of the maze of railroad tracks. A full assignment of companies responded to 2264, pulled at 4:26 p.m. A minute later Box 2235, Fifth and Berry, a vicinity box to both 2226 and 2264, was received and one engine company sent there.

At 4:28 p.m., just four minutes after the original box was received, a straight third alarm was transmitted from the Box 2226, bringing in nine more pumpers, three trucks, a second fireboat (the Fireboat Sullivan responded on the first alarm) and additional chief officers including Chief Albert J. Sullivan. Because of the difficulty of getting companies into the location, the shortage of hydrants and the lack of manpower, special calls were used to bring companies in by various routes:

At 4:51, three trucks (to supply manpower) to Box 2226; 5:14, two chemical companies to Box 2226 to protect long strings of freight cars and piles of lumber in the freight yards threatened by flying brands; 5:28, fuel wagon to Box 2226; 5:34, two engines to Box 2264; 5:40, one chemical to Box 2226; 6:15 p.m., two engines to Box 2264; 6:16, hose tender to Box 2264; 8:05 p.m., searchlight wagon and 8:06, coffee wagon, both to Box 2264.

Flames Roared Through Warehouse and Spread with Such Rapidity That Firemen Didn't Have a Chance

A total of twenty pumpers, eight trucks, four chemicals, two city fireboats, a Coast Guard fireboat and two fire barges, two State fireboats, four hose tenders worked at the fire in addition to the chief officers, 100 men of the Coast Guard Fire Battalion under Ensign O. S. Peterson, and auxiliary firemen and civilian volunteers.

Hydrants Insufficient

Although some hydrants had been installed near the new units, they were far from sufficient to supply water needed and pumpers worked drafting from the channel where the fireboats and fire barges lay. It was necessary hurt although one fire lieutenant received a broken leg.

The fire started a series of charges by city officials that the armed forces were constructing and remodeling buildings in San Fancisco that not only violated local building and fire laws in many ways but which were a definite menace to the city where nearly ninety-six per cent of the structures are classed as frames. It was charged that city inspectors were barred from buildings being remodeled, especially in the case of work done by the Navy.

Colonel Kenneth M. Moore of the Army's Corp of Engineers, in charge of all construction work in the area for the Army, said as far as he was concerned city inspectors had access to all jobs handled by the engineers but implied that if MPs under some other Army branch's jurisdiction refused to allow city inspectors on the job, it just wasn't the engineer's problem.

The Navy, like the Army, calling attention to the necessity for using noncritical materials and substitutes, asserted most jobs called for haste and did not allow for long consideration of plans before construction began. The Navy added it had no desire to increase fire hazards "since both the properties involved and personnel and material housed therein are too valuable to risk in improperly constructed installations."

The city's complaint that its inspectors were denied admission to remodeling jobs done by the Navy has been referred to the Judge Advocate in Washington. Lieut. General Delos C. Emmons referred similar complaints about Army jobs to Ninth Service Command headquarters in Salt Lake.

"The Navy's attitude on remodeling jobs seems to be that as long as their contracts on leased properties call for restoration of such properties to their original state when they are returned to their owners, what difference does it make whether alterations they make are illegal and make for fire hazards," said one city official.

Both the Army and Navy indicated they would not deviate from present policy and while no one came out and said so, everyone implied that there seems to be a war on.

All That's Left After Fire Swept a Wooden Army Cold Storage Warehouse

The finishing touches were just being put on the $300,000 structure, when overheated tar apparently caused the warehouse and huge quantities of tar, insulating cork slabs and other materials to go up in flames. Another of the warehouses can be seen in the background—a lucky wind blew the flames away from it. Over the tops of the adjoining buildings can be seen the masts of freighters in the nearby channel leading to the Bay.

Dr. William Gaul, Fire Department Surgeon, Dies

Dr. William Gaul, Fire Department Surgeon of the Yonkers, N. Y., Fire Department, died on April 8 of a heart ailment.

Dr. Gaul, who has been a practicing physician in Yonkers since 1914, received his medical degree from the College of Physicians of Columbia University in 1913.

to drag lines 700 feet or more and the undermanned companies were hard pressed to drag the heavy 3½-inch and 2¼-inch lines over the newly ploughed ground surrounding the warehouse.

A driving wind fortunately blew the flames which eventually burst through the roof away from the other units, all as large as the one afire. For a time it appeared that the heavy streams would knock the fire but huge supplies of tar, cork slabs and other building material fed the flames until they burst through the roof with a roar.

Pumpers Endangered by Flames

Flames endangered pumpers placed at the few hydrants in the installation and it became necessary to turn small lines on the apparatus, so intense was the heat. Falling sections of the roof and walls endangered the firemen from time to time and the soot from the burning cork and the black smoke from the hundreds of rolls of asphalt gave the weary firefighters the appearance of minstrel show players.

At one time the large turret gun mounted in the fire tower of the Fireboat Scannell was put into use but the distance from the fire was too great to make its use effective.

None of the injured were seriously

Battery Wagon and Manually Operated Streams Make Little Headway on Lee Side of Army Cold Storage Warehouse Fire

Most streams were supplied by fireboats operating in the channel at left of picture, and were concentrated on the windward side where heavy smoke and intense heat made it nearly impossible for firemen to approach the fire at all.

Boston Harbor Well Protected by Coast Guard Firefighters

Well Trained Force Establishes Commendable Record in Checking Fire Spread

By THOMAS F. MAGNER

SHIPMENT of munitions and other war material from United States ports has not been marred by a single disaster during the past two years and the major reason is the alertness of the United States Coast Guard, which is operating the largest fire-protection and fire-fighting force ever organized. And it also includes the greatest fleet of fireboats in the world.

At Boston, Mass., details of waterfront fire protection previously withheld for reasons of military security have been released to FIRE ENGINEERING by Capt. Frank M. Meals, United States Coast Guard Captain of the Port of Boston.

Acting under the authority of President Roosevelt's Executive Order 9074, Captain Meals, in 1942, solicited the enlistment of experienced firemen and fire inspectors from the Boston Fire Department, and fire departments from adjacent cities, and from civilian organizations. Lieut. Commander Francis B. Hanron, on leave of absence from the Boston Fire Department, was selected to head the Fire Division and to round out the organization and operating plan for the security of vessels and waterfront properties in Boston Harbor and vicinity.

Equipment for use by the Captain of the Port Fire Division required the conversion of several former fishing trawlers and outfitting these vessels with modern fire-fighting apparatus and two-way radio communication. There was also obtained numerous portable pumps which could be located temporarily at various waterfront facilities as need directed. Various types of fire extinguishers necessary to combat the several types of fires, fire protective clothing and transportation of men and equipment was secured and an intensive training program instituted.

Under Captain Meals the men engaged in fire prevention inspection work were especially trained by Benjamin Ingham and Nelson Gamage of the New England Fire Insurance Rating Association, who, because of their long experience were thoroughly familiar with all waterfront facilities and fire hazards.

The inspectors worked under the close supervision of these two men for many months. In addition, an intensive program was put in effect to train all personnel standing security guard watches on the waterfront to recognize fire hazards, defective equipment, and to report these incidents for immediate consideration.

Classes were held to familiarize the men with new types of fire-fighting equipment and the various problems encountered in handling equipment on both American and foreign constructed vessels.

As rapidly as possible the men were sent to the U. S. Navy Fire Fighting School in Boston, or to the Coast Guard Port Security School at Fort McHenry, Baltimore, Maryland, for courses in fire prevention and fire-fighting. Further, a close bond of cooperation with the Boston Fire Department through Chief Samuel J. Pope made available to the men the advice and experience of that Department. Thus, at the present time the Port of Boston has available an extremely well trained and experienced organization of commissioned, warrant, and petty officers participating in fire prevention inspection and fire-fighting activities in the Commonwealth city.

Tapper Bells Installed in Each Coast Guard Fireboat Station

Through the cooperation of Fire Commissioner William A. Reilly and Chief Pope, arrangements were made for tapping into the Boston fire alarm system and to have tapper bells installed at all Coast Guard Fireboat stations, at the Boston Harbor Patrol Base and at the Captain of the Port Office. By this means the entire Coast Guard Fire Division was instantly aware of all fires along the waterfront as soon as they occurred.

Arrangements were also made whereby certain Coast Guard fireboat crews could be quartered at existing fireboat tations, and the Coast Guard fireboats berthed alongside. Coast Guard fireboats are located at each City Fireboat Station and in addition, at certain other strategic points in the Boston Harbor.

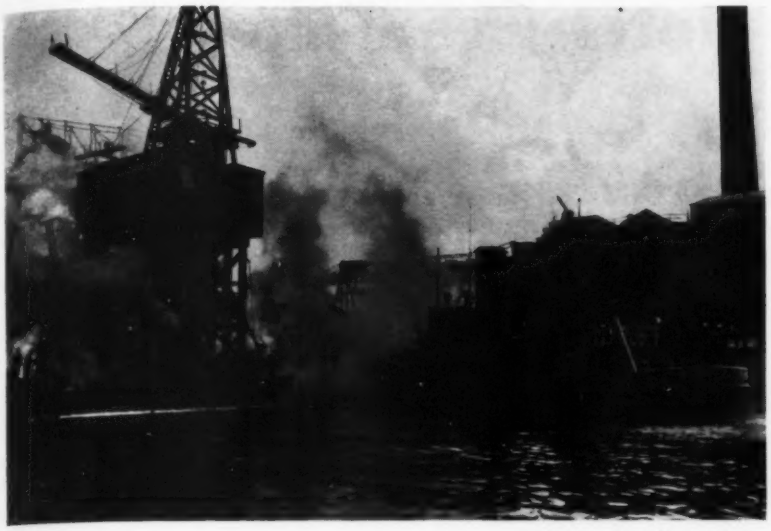
During the year from September 30, 1942, to October 1, 1943, Coast Guard fireboats responded to 2,852 waterfront fires in the nation. Some of these were aboard vessels loading explosives. Today, 250 Coast Guard fireboats operate in 121 ports of the United States. On February 25, 1942, when the task of port security was assigned to the Coast Guard, only twenty-three ports in the nation had fire protection.

Nineteen fireboats are operated by the Coast Guard in the ports of the First Naval District. Seven of these are assigned to the protection of the Port of Boston. Portland, Maine, and Providence, R. I., have two each; Rockland, Portsmouth, N. H.; Gloucester, Fall River, New Bedford, Mass.; and Newport, R. I., have one each.

From May 5, 1942, to February 18, this year, 159 waterfront fires were discovered in Boston in the area under the vigilance of the Port of Boston Coast Guard Detail. These, explained Captain Meals, were quickly extinguished with

Official U. S. Coast Guard Photograph

Coast Guard Firefighting Crews in Action at Sprague Coal Co. Fire in South Boston



Official U. S. Coast Guard Photograph

Coast Guard Fireboats Aid Boston Fire Department in Protecting Boston Harbor Against Fire. Another Scene at the Sprague Coal Co. Fire

negligible damage due to the alertness of the guards and the efficiency of the fire-fighting force. At least one Coast Guard fireboat responds to every alarm sounded from the Boston waterfront and the Coast Guard jeep patrol is equipped to haul hose, chemical carts and other apparatus.

Port facility improvements estimated at $75,000,000 have been made since over 209 original inspections by Captain Meal's force soon after the Coast Guard took over. Regular re-inspections are made under the direction of Lieut. Commander Hanron.

Vessels Inspected on Arrival in Harbor

All vessels entering the Port of Boston are inspected upon arrival and required to conform with all the Port Security Regulations. By this method a close touch is kept on the hazards which invariably develop in the handling of certain types of cargo and in the conduct of certain types of repair work, particularly welding, burning and other "hot" work.

Before any welding, burning or "hot" work is permitted, a Captain of the Port representative inspects the vessel to see that all hazards are eliminated and sufficient fire watch guards are on hand and provided with the proper fire-fighting equipment.

Special Activities of Coast Guard

"Some special activities conducted by our men," said Captain Meals, "include the assignment of Coast Guard fireboats to stand by vessels which are in an immobile or dead status and unable to man their own fire lines. Our inspectors also investigate oil pollution reports, and in cooperation with the Boston City Police and the Massachusetts Department of Public Safety, endeavor to obtain evidence of such pollution in order that prosecutions may be had.

"Coast Guard fireboats break up collections of oil in the harbor, wash the oil accumulation out to sea, and also flush off oilcoated pilings to eliminate fire hazards. Whatever means of success we have had in Boston has been largely due to the splendid cooperation that exists between Federal, State and Municipal agencies, as well as the fine spirit displayed by waterfront property owners in correcting the deficiencies revealed by our inspectors."

Berea, Ohio, Hit by $78,000 Fire

The Fire Department of the City of Berea, Ohio, battled one of the worst fires in the history of the city last Fall, when some rubbish being burned behind a store in the business section got out of control and started a fire that caused a loss of $77,920.00 before it was finally extinguished.

The fire, which was confined to a two-story block of stores and second floor suites, was reported by the occupant of one of the apartments by telephone to the Fire Department at 4:40 p.m. Both pieces of apparatus were rushed to the scene. Although a city of nearly 7,000 population, Berea has a department of twelve volunteers, 2 regular firemen and a Chief. Within a few minutes after sounding a general alarm of fire, the firemen were all on the job, but the rapidity with which Chief John C. Nevel could see the flames were spreading caused him to immediately have other neighborhood towns contacted, and their assistance provided to help his men. In all, apparatus responded from Strongsville, Olmsted Falls, North Olmsted, North Royalton, Middleburg Heights, Rocky River, Medina, Brook Park, and the Cleveland Municipal Airport. All that could be accommodated at hydrants were pressed into service from the main street in front of the burning buildings. The others were put in the rear and drafted water from an abandoned quarry site.

About 8:30 p.m. the fire was brought under control, and by 10:00 p.m. most of the out-of-town apparatus had returned to their respective quarters. Three members of the Berea Fire Department were left on duty all night, patrolling the buildings every half hour. At different times throughout the night, small blazes were discovered and extinguished, and it was not until 3 p. m. the following day that Chief Nevel gave orders to discontinue the patrol.

According to records of the Berea Water Works, 1,000,000 gallons of water were pumped on the flames from the hydrants, with probably a nearly like amount having been drafted from the quarry.

Firemen were handicapped greatly in fighting this fire because of the fact that these buildings were backed up by a river bank, and close contact with the flames could be made only with the greatest difficulty. The fact that there were no casualties can be attributed to the help provided by about 300 men of a Navy V-12 training program, who were stationed at Baldwin-Wallace College in Berea. Their assistance in handling the crowds, hose lines, and in doing anything requested of them was prompt and efficient, as was the policing done during the night by others of the same group.

RONALD H. GARLICK.

View of the Disastrous Fire in Berea, Ohio

Frame Hotel Fire Takes Heavy Toll of Life

Blaze Believed to be of Incendiary Origin; One of a Series of Suspicious Fires at San Francisco

By BOB GREENOCK

TWENTY-TWO persons were killed and 27 others, six of them firemen, were injured when fire, starting shortly before midnight March 27, swept a three-story, frame hotel at Fourth and Clementina Streets in the heart of San Francisco's "skid row."

Both Fire Chief Albert J. Sullivan and Fire Marshal Frank Kelly, head of the department's Division of Fire Prevention and Investigation, expressed the opinion that a pyromaniac, possibly the one who set at least twenty-five other fires in the Bay Area over the previous weekend, was responsible.

However, a coroner's jury on April 6 decided on the evidence presented that "We are unable to determine the cause." At the same time, the jury's verdict recited that the rapid spread of the flames was due, at least in part, to the type of construction and added:

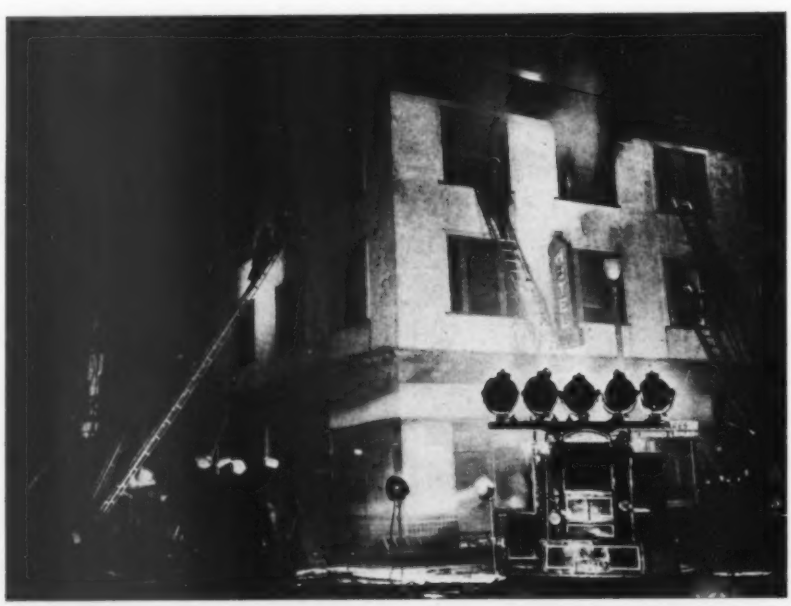
"We find that the Fire Department responded promptly and that the officers and men of the department did their work efficiently, saving many lives, even though seriously undermanned."

Chief Sullivan had told the new Board of Fire Commissioners, headed by Charles R. Page, at a meeting the night following the fire that, "This was not a normal fire. In my judgment, it was a fire that was accelerated with some highly volatile fluids. I passed there personally on a tour of inspection through that area from about 10:15 to 11:50 p.m. I passed that building at about 11:40 p.m. and saw no evidence of fire."

Chief Sullivan and Marshal Kelly, together with some of the latter's men, were making tours of the district because of a series of incendiary fires, six of them in the same south of Market Street district earlier the same evening.

Marshal Kelly testified before the commission:

"I arrived at about 11:56 p.m., a minute after the box, 2215, was transmitted. (Note: all alarms are put out over the air by Station KGPD, operated by the San Francisco Fire and Police Departments.) We had a detail out last (Monday) night and were at Seventh and Mission when the box came in. We had had six similar fires, but none of the same magnitude, starting at 8:15 p.m. until this one came in at 11:55 p.m. in that neighborhood.



Scene at New Amsterdam Hotel Fire

Lights from the searchlight engine on the Fourth Street side illuminate the exterior and interior of the building. Few were able to avail themselves of the fire escape (left) at rear of building, so fast was the spread of the fire. The fire apparently started on the second floor landing of the rear stairway, immediately cutting off that means of egress, and soon raced down second and third floor corridors to cut off front stairway.

Chief Sullivan, who returned to the commission hearing after being called to a second-alarm fire, said later: "The theory of incendiarism is strengthened by the occurrence of another fire in this vicinity less than four hours before—a third alarm from Box 2243, located at Fifth and Harrison Streets, which occurred at 8:05 p.m. and which involved the St. Anthony's Apartments at 372 Fifth Street."

Chief Sullivan's Report

In his official written report to the commission, Chief Sullivan said, in part:

"The building in which the New Amsterdam Hotel is located is a three-story frame structure, the ground floor of which is occupied on the street front by stores and in the rear by rooms, and the two upper floors as a rooming house, some of the rooms being equipped with housekeeping facilities."

(While the building is classified by the Fire Department as a frame, the walls from the ground to the second floor, were of brick. The building originally was a six-story brick building but was greatly damaged in the earthquake and fire of '06. Permission was given at that time to erect two frame stories on the brickwork, which was found to be sound, as was the case in many instances following the fire where "temporary permits" were granted. Hundreds of these "temporary" structures still stand, are a menace to the city where more than ninety-five per cent of the buildings are of frame construction.)

"At 11:55 p.m., the first alarm was received from Box 2215, located at Fourth and Folsom Streets, and two chief officers, together with six pieces of fire equipment (two engines, one truck, one chemical, a hose tender and salvage wagon) responded.

"At 11:58 the ranking chief officer (Acting Assistant Chief Engineer James Fitzpatrick) who responded on the first alarm, finding upon his arrival that the fire had spread throughout the two upper floors of the building, ordered the striking of a straight third alarm which brought to the scene the Chief of the Department, two more battalion chiefs and seventeen additional pieces of fire equipment.

"At midnight, five minutes after the first box was received, one additional truck company was special-called upon order of the Chief of Department. At 12:02 a.m. a fourth alarm was sounded, bringing one additional battalion chief and eight additional pieces of fire equip-

ment. Immediately thereafter four additional chemical companies, two water towers and a searchlight engine were summoned by special calls.

"Upon my arrival at approximately 12:01 a.m. (Chief Sullivan had just returned to his quarters, about a mile away, after his inspection tour) the fire had almost complete possession of the two upper floors and the greater part of the first floor, particularly in the rear.

"A considerable portion of the roof was involved and flames were spreading through a lightwell into the adjoining building to the south. Ladders were placed and life nets spread at all locations where trapped people appeared at windows and on fire escape balconies and every person who had made his way to a window, fire escape or the roof was removed to safety.

"Effective streams of water were turned on the fire immediately upon the arrival of the first alarm companies and entrance to the building was forced by way of the front stairs as well as through the fire escape. Subsequently, heavy streams were concentrated on the main body of the fire and all exposures were covered with adequate streams to prevent further spread of the flames. The fire was brought under control at approximately 12:30 a.m.

"Incomplete reports to date indicate that there were about eighty people in the hotel when the fire started. (It was never ascertained how many actually were there for the hotel register was partially destroyed by the fire.) In my opinion, most of the twenty-two whose bodies were recovered were quartered in the rear or inside rooms and they had already lost their lives before the arrival of the fire department.

Fire Department Aided by Coast Guard

"The Fire Department was materially aided by a detail of twenty-five men from the U. S. Coast Guard, and by approximately forty Auxiliary Firemen, and by the customary attendance of the police, emergency hospital staff and the coroner's staff. All of these services functioned with the greatest efficiency and rendered very valuable service."

The chief and Fire Marshal Kelly later paid tribute to unidentified sailors who seemed to appear from nowhere to aid first-arriving firemen to man life nets. The sailors later disappeared in the crowd without giving their names.

It was later learned that Policeman Eugene A. Claney, attached to the Southern Police Station which is located only 400 feet from the hotel on Fourth Street, was the first to discover the fire. He said the rear of the building was engulfed in flames which were sweeping the side of the building. He immediately ran to Fourth and Folsom to pull the box and then returned to the front entrance where he found a pajama-clad man, first of the tenants to notice the fire and escape.

The man held open the front door while the policeman ran up the stairs to the second floor where he knocked on doors and hollered to awaken as many people as possible before he was driven back to the street by the flames which already were licking at the front stairs from a lightwell.

Claney then ran back to the street where he shouted to tenants at windows not to jump, that the fire apparatus would be there in a moment. The firemen did arrive as he was shouting and rescue work began immediately. Claney said between two and three minutes elapsed between the time he pulled the box and the apparatus arrived.

Companies responding on the first alarm had only three and four blocks, respectively, to come, a factor that made the death toll less for had they not arrived so promptly many more persons would have jumped to possible death or certain injury. As it was, one woman was killed in a leap from the third floor on the Clementina Street side and many others were hurt in jumping from the second floor.

All of those who died were trapped by the fast-spreading flames which shot furiously up the back stairway from the second floor and down the second and third-floor halls which completely encircled the inside of the building.

Under normal conditions the hallways, running completely around the inside of the floors as they did, would have afforded egress in two directions. But the fire swept down the halls so fast that it not only cut off the back stairway where investigators said the fire originated, but cut off the front stairway and the hall to the one fire escape on the Clementina Street side of the building.

Most of the bodies were found in hallways on the third floor although several were found in the lightwell in the center of the building. Apparently the trapped tenants, both Negroes and Caucasians, had jumped into the lightwell in desperation when they were trapped.

Several other fires of suspicious nature were extinguished within the next day or two but while several suspects were apprehended by police, all were released without charges being made.

Loss on the hotel was set at less than $75,000.

Working at the fire were seventeen engines, six trucks, five chemicals, five hose tenders (battery wagons), two water towers, a searchlight engine, one salvage corps unit and six chief officers.

War Plants Swept by Fire

Hagerstown, Md., had its most disastrous fire in a decade when flames swept the war plants of the Hagerstown Wood Products Company and the Stratton Furniture Company. Both plants were working on plane parts for the Fairchild Company and the Martin Company.

The fire started about 2:30 in the afternoon of December 23 from a minor explosion and within ten minutes was racing through the three-story buildings covering an area of about two acres. A general alarm was sounded immediately upon the arrival of the first companies and within five minutes of that, all the paid men assisted by 150 volunteers were at the scene. The fire ground was on the outskirts of the city, but good pressure saved the section.

Mutual aid was summoned from Williamsport and Funkstown, Md., and the Western Maryland Railroad Fire Department assisted. As the fire spread from the main plant by way of a conveyor platform nearby, it caused the destruction of a home. High winds carried sparks for some distance, but groups of citizens extinguished them without damage.

The fire was reported as starting in the paint room and was caused by sparks igniting the fumes. After an all night battle the fire was extinguished with a loss of approximately $400,000, and with only the walls of the shipping building left standing.

GORDON R. MULLINS.

Photos by J. Wolfinger

Scenes at the Fire in the Hagerstown Wood Products Company and in the Stratton Furniture Company

Practical Training for Auxiliary Firemen

By FRED SHEPPERD
Editor, FIRE ENGINEERING

IN this installment of the series of articles on "Practical Training for Auxiliary Firemen" are discussed salvage operations.

Q. How are shelves, filled with merchandise, covered?

A. Shelves, filled with merchandise, are covered by fastening the salvage covers on the wall above the cases, so that water coming down will flow over the tops of the cases and down the salvage covers to the floor.

Where stock is piled on top of shelving to the ceiling, a difficult problem is presented. It may be necessary to remove material from the top shelf in order to properly attach or place the covers.

Q. What other obstacles to efficient salvage work may be encountered?

A. Other obstacles to efficient salvage work include shelves attached to walls, making it impossible to protect stock in contact with the walls; stock piled on floor without skids; covering of drains in basements of piled stocks, making it hard to locate the drains when water has collected in the basement.

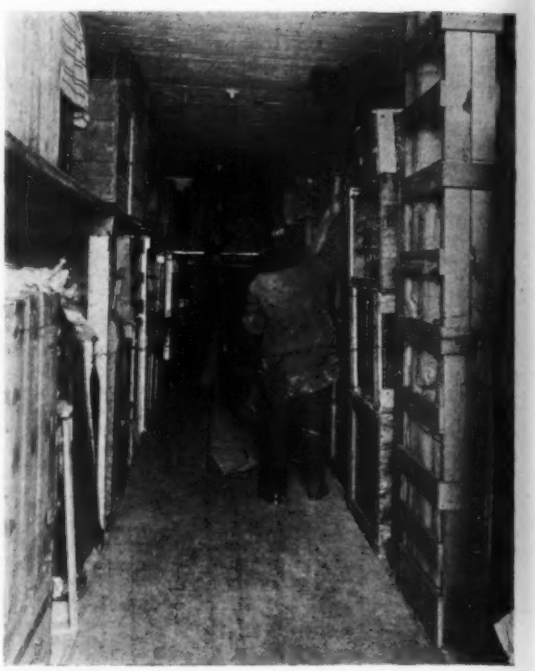
Q. What is the procedure followed when it is desired to discharge water out through a window when salvaging?

A. Where large amounts of water are present on upper floors, and it is necessary to sweep long distances to elevator shafts, a hole may be cut in the floor near a window and a chute placed under this hole and extended through the window on the floor below. In this manner water is diverted to the outside of a building. While chutes are ordinarily made of salvage covers, if a great number of chutes are required they may be built at the fire out of whatever material may be found on the premises, together with the use of the regular covers.

Q. After the larger part of the water has been removed from the floor by chutes, or has flowed down stairways or other vertical shafts, what is the next step in dewatering the floor?

A. By use of brooms or squeegees. Squeegees, when properly designed, are efficient for removing small quantities of water.

Brooms, while very satisfactory, may create some damage by spraying unprotected materials near the floor.



Stock Piled to the Ceiling Makes a Difficult Covering Job

Where It Is Impracticable to Cover Holes in Roof After Fire, Catch-Alls Are Placed in Attic. Should It Rain, Water Will Be Held on Attic Floor

Q. Are articles or merchandise, such as furniture, ever dried by salvage men after a fire?

A. Yes. Drying of wetted merchandise may reduce losses materially. For example, certain varnishes when exposed to moisture for a period of time may discolor; glued joints may separate if subjected to water. Drying of such articles by use of sponges, chamois, or rags, may cut losses down materially by increasing the salvage value.

Q. Why is it desirable to drain piping, tanks, and other water conveyors after a fire?

A. After a fire it may not be possible to provide heat in a building, and if the fire occurs in zones where low temperatures are encountered, rupture of the tanks or piping might result from freeze-ups.

Q. If basement drains cannot be located, what method may be employed to free the basement of the larger part of the water accumulated there?

A. If basement drains cannot be located, or if they are not provided, it is frequently possible to relieve the basement of water by breaking the soil pipe with a sledge hammer. The pipe should be broken off flush with the floor so

that water may flow directly to the sewers.

Q. What steps should be taken where water is found travelling down a pipe through pipe recesses to floors below?

A. Water following pipes downward may cause serious damage to merchandise on lower floors. Such water may be caught by wrapping a cover around the pipe and tying with twine, which is part of the salvage man's equipment.

Chute of Salvage Covers Carries Water Down Stairs. Salvage Cover with Sawdust Dikes Along Each Side Provides Channel for Flow of Water Over Floor

Q. Where large quantities of stock, in piles, are to be covered, what is the procedure?

A. When covering large piles of stock, the first cover is drawn from the floor upward and the second cover spread from that point back, giving the proper lap to prevent water running from the top cover underneath and onto the stock. Occasionally, stock can be arranged to permit coverage with a single cover, but the officer should know from experience and be able to tell exactly how many covers would be required to cover any particular stock or pile of stock and be governed accordingly. One cover spread lengthwise may not cover a pile, whereas if it had been spread in the width, the cover might easily complete the work.

Q. Where belted machinery is to be covered, what precaution is necessary?

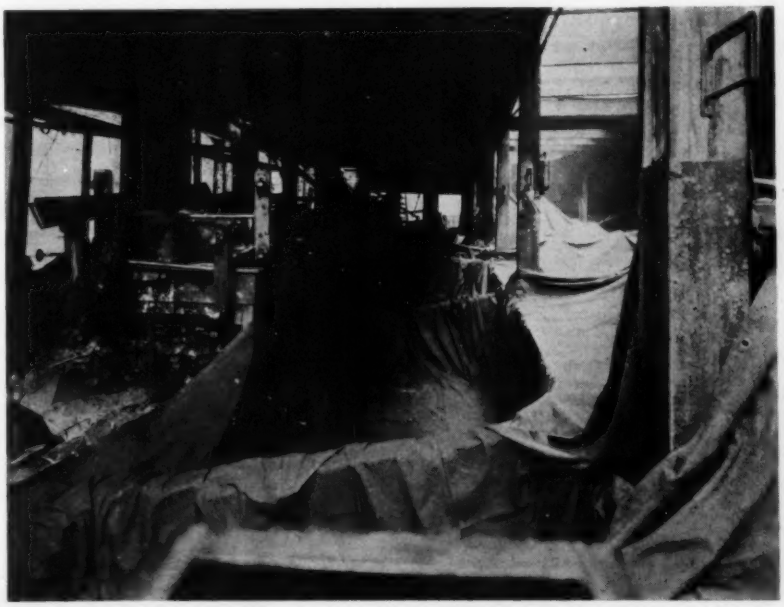
A. In covering belted machinery, it is important to wrap a cover around the belt in such a manner as to prevent water following the belt and damaging the machinery. If it is possible to remove the belt, this should be done. Sometimes it may be desirable to cut the belt. If it is a rawhide laced belt, the lacings can be cut and the belt thus separated. If the belt is stapled, or joined with steel lacing, then the belt is usually cut about three feet from the lacing.

Q. In covering household furnishings, what is the usual procedure?

A. In covering household furnishings, rugs are rolled and taken from the floor and placed upon tables or beds. Pictures, drapes and the contents of closets are removed and placed in position convenient for covering. In covering a bedroom, men find the room rather small to work in, and swinging glasses on dressers, etc., may knock down breakable articles which may be on the top of dressers. These articles are gathered and placed in a drawer. Dressers are backed up against the top ends of the bed, and in this manner one cover will generally perform the job of protecting the contents of an ordinary bedroom.

Q. What care should be given salvage covers?

A. Covers should be thoroughly washed and dried before being placed in service. They should be carefully examined for cuts and tears after return from fires. At fires, care should be exercised to avoid unnecessary tears due to pulling covers over sharp projections. Covers should be removed from floors and stairways as soon as possible, and walking over covers unnecessarily should be avoided. When baling water out of catch-alls, wood shovels should be employed. Nailing of covers except in grommet holes should not be permitted. Covers should never be spread on a floor or sidewalk over broken glass, or other sharp pieces of debris.



Factories Sometimes Present Difficult Jobs in Covering. Here a Series of Catch-Alls Prevent Water from Reaching Lower Floors

New Fire Truck for North Riverside, Ill.

A 500-gallon combination pumper and ladder truck has been purchased by the Village of North Riverside, Ill., from the Mack Manufacturing Corporation. A contract was signed between the village and the Mack Company last October and a War Production Board priority was granted to the village in December for the apparatus.

At the same time the village contracted for 200 feet of 2½-inch hose and 200 feet of 1½-inch hose, priority for which was also granted last December.

Bridgeport to Erect Two New Stations

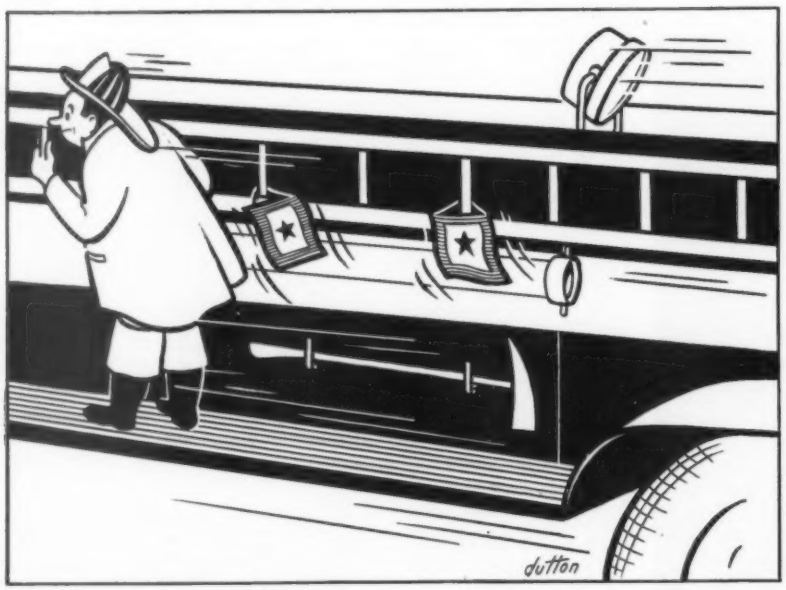
Federal grants totalling slightly more than $49,000 to aid in the construction of two new fire stations at Bridgeport, Conn., have been allowed by the Public Works Administration, Washington, D. C.

One of the new stations will be erected on Evers Street in the Beardsley Park section of the city, and will cost $25,000, of which half will be furnished by the City of Bridgeport and half by the FWA.

The other station, estimated to cost $23,500, is to be located on Sylvan Avenue in the Sylvan Crest District. The cost of this new station will also be shared equally by the City and Federal Government. In each case the total cost includes partial furnishing of the building and in the case of the Evers Street stations it includes acquisition of land.

THOMAS F. MAGNER

FALSE ALARMS



Teacher: "Now, children, every morning you ought to take a cold bath; and that will make you feel rosy all over. Are there any questions?"

Boy: "Yeah, teacher, tell us some more about Rosey."

Blameless

"This is the fourth morning you've been late, Susan," said the mistress to her maid.

"Yes, ma'am," replied Susan, "I overslept myself."

"Where is the clock I gave you?"

"In my room, ma'am."

"Don't you wind it up?"

"Oh, yes. I wind it up, ma'am."

"And do you set the alarm?"

"Every night."

"But don't you hear the alarm in the morning, Susan?"

"No, ma'am. That's the trouble. You see, the thing goes off while I'm asleep."

Lucky Guy

The police-sergeant in a small country town sent for a constable and lectured him severely.

"You've been in the force now for 12 months," he said, "and never once have you brought in a case of any kind. Now I'm willing to give you one more chance. Squire Daly has 'phoned to say that someone is stealing his apples. Go up there tonight and catch the thief."

About midnight the waiting constable saw a man walking along with a sack over his shoulder. He pounced on him, opened the sack, and found a quantity of valuable silver.

"H'm!" he murmured. "My mistake. But you can thank your lucky stars it wasn't apples."

No Trouble

"Henry," said Mrs. Glipping in one of her tearful moods, "if I were to die, would you mourn for me?"

"Certainly I would, my dear," replied Mr. Glipping, as he scanned the financial page.

"And would you visit my—boo-hoo—grave sometimes?"

"Of course. Why do you ask such a foolish question? You know the cemetery is on the way to the golf links."

Medically Described

A patient who complained of digestive troubles was told by a specialist that he was drinking too much and would have to knock off.

"Well," said the patient, "what am I to tell my wife?"

The doctor thought for a few minutes, then said: "Tell her you are suffering from syncopation. That will satisfy her."

The patient did as he was told. "What is syncopation?" asked his wife.

"I don't know," said the husband, "but that's what he said."

When her husband had gone out the wife looked up the word in the dictionary, and found that it meant: "Irregular movement from bar to bar."

Pa, a man's wife is his better half, isn't she?

We are told so, my son.

Then if a man marries twice, there isn't anything left of him, is there?

Correct, my son.

Immune

"How about a little kiss, girlie?"

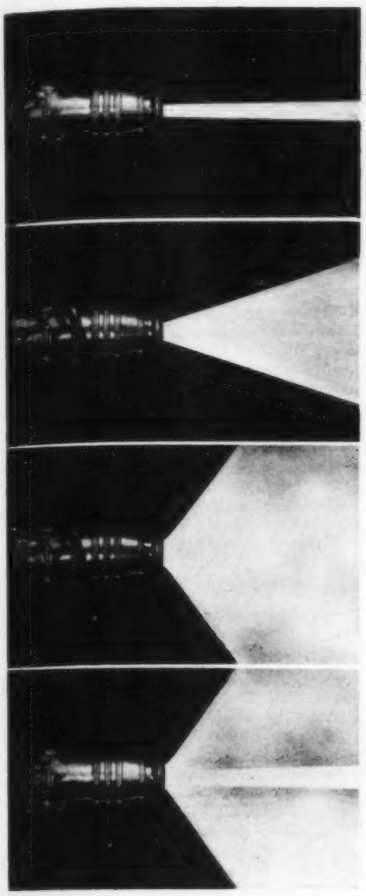
"No, I have scruples."

"Well, that's all right; I've been vaccinated."

Improvement

Old Dr. Williams advised Purley Adams to have his boy's nose operated on—deflected septum or something. Purley raised various objections—finally said he'd heard of somebody that, after a nose operation, lost his smell. 'Well, Purley,' the Old Doc says, 'if an operation'l cure that boy of his smell, that's another argument for it.' — Paul B. Brooks, M. D.

"How Do We Know This Isn't a Trick to Get This Room Away from Us?"



Fights ALL Types of Fires

This One Nozzle Gives You Any Stream You Want in a Couple of Seconds

You seldom know what you'll be up against when the call comes in. So why not be prepared for any and all types of fires? The UNIVERSAL Nozzle goes a long way in that preparation because, with this one nozzle, you can have any stream you want (from solid stream, through fog of any degree, to 130 degree water curtain, or any combination) in a second or two.

Used by— *U. S. Coast Guard vessels, U. S. Navy air stations, U. S. Army air fields, municipal fire departments, and hundreds of industries.*

Protect Property and Personnel with This Fire-Tested Nozzle

Reduce fire losses by having at your command just the type of stream which is most effective. Protect fire fighters by giving them a veritable wall of water for their security. The UNIVERSAL Nozzle does both! *Send for complete information.* Dealers, fire departments, government agencies, and industries will be given all the data by return mail. Address ——

L. N. Curtis *and* Sons

Emergency Equipment

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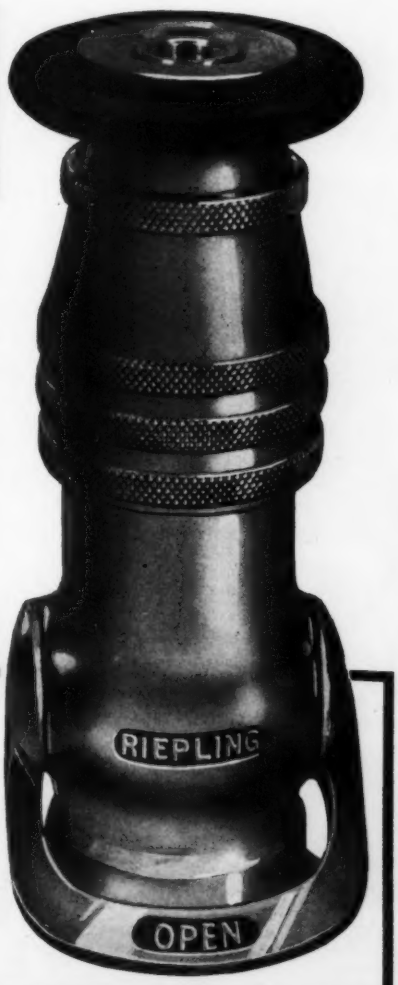


The UNIVERSAL NOZZLE

All bronze construction with finely polished finish; no moving parts; no leather to wear out; metal to metal seats; heavy rubber bumper; light in weight and sturdy construction.

UNLESS YOU WEAR . .

GAS-TIGHT Fog-Proof GOGGLES

Water placed inside keeps lenses clear. Best known eye protection!

SAMPLE $1.65

DUPOR No. 20 Twin-Sponge MASK

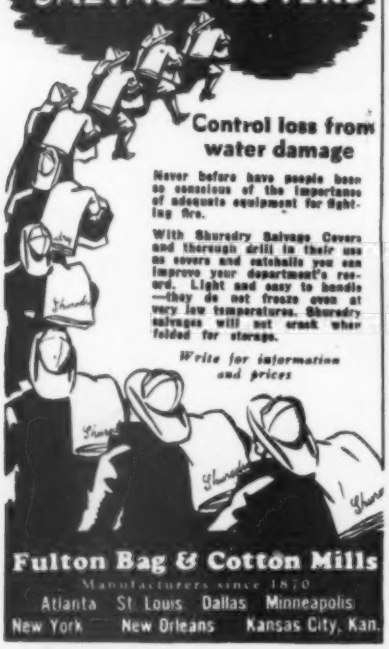
Double sponges filled with water give cool, smoke-free breathing!

SAMPLE $2.25

Samples of both sent $3.90 *Postpaid*

H. S. COVER, 68 Chippewa St., South Bend, Ind.

USE Shuredry SALVAGE COVERS



Control loss from water damage

Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

Write for information and prices

Fulton Bag & Cotton Mills

Manufacturers since 1870

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DROPPED MATCH STARTS LARGE SAN FRANCISCO WAREHOUSE FIRE

Sixteen-Year-Old Boy, Searching for Missing Crayon, Ignites Cotton Bales

By Bob Greenock

A SIXTEEN-YEAR-OLD high school boy, working as a checker in a large brick warehouse near Fisherman's Wharf along San Francisco's waterfront, caused a 5-alarm, $750,000 fire when he dropped his marker's crayon and lit a match which dropped between two bales of cotton as he searched for the inexpensive colored pencil.

At first it was thought the fire, which occurred the afternoon of April 1, might have been an act of sabotage or the work of an arsonist who had been busy in the San Francisco Bay Area for more than a week but Fire Marshal Frank Kelly's men after close questioning of all employes got a confession from the boy who was not held on any charge.

The warehouse, a block long and half a block wide, is located on Hyde Street, is three stories high at Beach Street and increases to four stories down the hill at Jefferson Street. It contained two floors of baled cotton with foodstuffs, some of them sacked and some in the form of canned goods, on the floors. About one-third of the building was gutted but firemen, aided by firewalls, prevented destruction of the interior of the entire building.

One auxiliary fireman, Louis Zerga, 50, suffered a fatal heart attack while volunteering his services and eleven other firemen were injured.

Box 1524, Leavenworth and Jefferson, was pulled at 4:05 p.m. Two vicinity boxes, 1615 at Hyde and Beach and 1439 at Hyde and Jefferson, were pulled within two minutes. A second alarm was pulled at 4:12 p.m. and a third one minute later when it was determined that firemen could not effectuate an entrance to the building because of the dense smoke and because of the difficulty in opening up the building, formerly used by the California Packing Company but now operated by the San Francisco Warehouse Company. While officials refused to comment, it was asserted later that the warehouse contained lend-lease materials.

Apparatus Special Called

Two extra salvage wagons were special-called at the time of the second alarm and the rescue squad, equipped with Gibbs helmets and masks, at 4:17. At 4:33 a small water tower was ordered to the fire, at 4:45 two additional trucks were called. Another small water tower was ordered to the scene at 4:53 and Fireboat No. 2 was summoned at 5:07 to augment the engines and high pressure system. Six engines drafted from the Bay, just a half-block distant.

The fire, which had been confined to the interior of the building, broke through the roof and threatened to communicate to adjacent warehouses operated by the Army and loaded with materiel of restricted description. A 4-4 was pulled at 5:12, followed a moment

Fire Sweeps San Francisco Warehouse

Here's a general view of the five-alarm fire that raged through a San Francisco Warehouse destroying half a million dollars worth of Lend-Lease stock. Baled wool, tires, rubber, wheat, corn and wool were stored in the building.

Specify a HARDIE HIGH PRESSURE PUMP in your Fog Fire Fighter

● The value of any Fog Fire Fighter depends directly upon the High Pressure Pump used for atomization of the water. Hardie builds pumps that deliver from 35 to 60 gallons per minute at *nozzle pressures* of 500 to 800 pounds, producing a true fog of maximum efficiency and coverage.

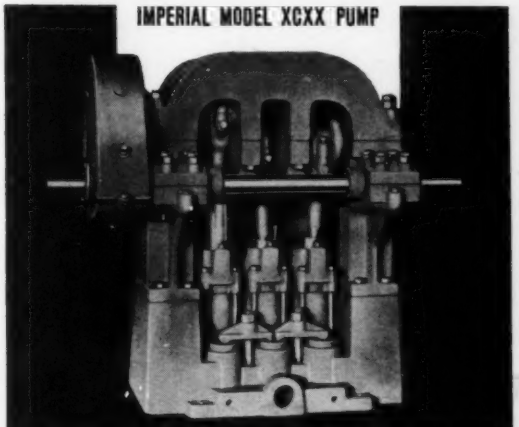
The Hardie pump is much larger and stronger than other pumps of equal rating. The Cylinders are much larger. The Hardie pump reaches its full rated capacity at the slow speed of 130 R.P.M., assuring continued operation for long periods without faltering, sustaining easily the desired volume and pressure as long as you want it.

The Hardie High Pressure Pump is the only such pump that is completely lubricated—even the plungers, plunger walls and cups run in a bath of oil. This means dependability, power economy, trouble-free operation, long life. These are reasons why leading manufacturers of Fog Fire Fighting Trucks specify Hardie High Pressure Pumps.

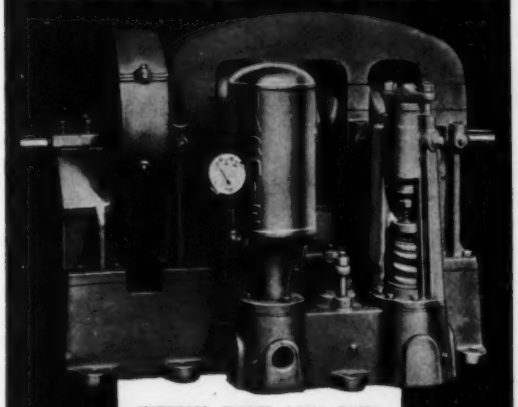
THE HARDIE MFG. COMPANY

Hudson, Mich. Los Angeles, Calif. Portland, Ore.

IMPERIAL MODEL XCXX PUMP



HARDIE PUMPS



IMPERIAL MODEL LCXA PUMP

Perfected Fog Fire Gun

● The Hardie Fog Fire Gun is perfectly balanced and easy to handle. Opens and closes instantly. Readily adjustable from wide close-up drenching fog spray to long distance stream. Strongly built to deliver nozzle pressure of 500 to 1000 pounds.

● Hardie Pumps are found in the Fog Fire Trucks built for the U. S. Army Engineers by The Mack Mfg. Company, Long Island City, N. Y., General Fire Truck Corporation, Detroit, Michigan, General Pacific Corporation, Los Angeles, California, Seagraves Company, Columbus, Ohio, and in the Crash Trucks built by Edgar Road Tank Works, Linden, N. J., for Pan American Airways, and in other notable Fog Fire Fighters.

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High Pressure **PUMPS AND FOG GUNS for Fog Fire Fighters**

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We are fighting with you with every man and every machine we have.

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Miscellaneous Fire Department Supplies of Distinction.

THE New WHEAT
Rechargeable Spotlight
MODEL 158
2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION
Critical Materials Reduced to a Minimum to Insure Availability
FEATURES
★ Positive "non-spill" Construction
★ Less expensive Operation than dry cells
★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
★ Simple to Charge and Water No need to take Lamp apart
★ Light can be Focused and Directed as Desired
WRITE FOR COMPLETE DETAILS
KOEHLER MANUFACTURING COMPANY, INC.

later by a special call for a large water tower. At 5:32 a fifth alarm was struck, bringing to the fire a total response of twenty-three engine companies. A special for two chemicals was sounded at 5:38 and they were put to work patroling the neighborhood to extinguish flying brands driven by a moderate but steady wind.

Later, a fuel wagon, the searchlight wagon and coffee wagon were special-called to augment the forces at the fire which included, in addition to the pumpers, seven trucks, three chemicals, one fireboat, seven hose tenders (battery wagons) and chief officers including Chief Albert J. Sullivan.

In addition, the Coast Guard sent 100 of its men from the Coast Guard Fire Battalion, the Army sent a platoon of men from a nearby installation, at least 100 auxiliary firemen aided. Auxiliary police, military police and shore patrolmen aided regular city police in maintaining fire lines.

A number of auxiliary companies were put into service by chief officers of the auxiliary department, including three companies placed in service in houses vacated by all regular equipment.

The oncoming night shift of firemen came on at 6 p.m. and the day shift was held until 8 p.m. when they were released after it was certain the fire had been knocked out.

Relief truck companies were sent to the scene late on the evening of April 1 to aid in overhauling the huge bales of cotton and other material. A number of firemen were sligtly injured and others escaped serious injury as canned goods exploded from the heat generated.

While all companies were back in service by Monday, April 3, hydrant lines were left connected to standpipes and small house lines equipped with shutoff nozzles were left at the scene to be used by laborers and warehouse workers who continued the job of overhauling for more than a week.

The fire was the second 5-alarm fire in the past several months.

Dearborn Lumber Yard Swept by Fire

A fire which caused a million dollars worth of damage and which burned for thirty-six hours swept the Smith-Orr Lumber Company and the Berg-Patterson and Buck Lumber Company and threatened a warehouse leased by the U. S. Army Air Forces, in Dearborn, Mich., on February 12.

Starting at 10:10 p. m. on February 12 in the office of the Smith-Orr Lumber on Warren Avenue and Anthony Street, the flames, fanned by a high wind, soon engulfed the lumber yard, spread to the nearby lumber mill, consumed the delivery truck shed and the complete fleet of trucks, jumped to a string of freight cars and involved the neighboring lumber yard of the Berg-Patterson and Buck Lumber Company, consuming all its buildings and stock piles. The U. S. Army Air Forces Warehouse, next in line, containing millions of dollars worth of airplane engines and trucks, was in great danger of being destroyed.

All Dearborn's fire equipment was sent to the scene. Firemen were hampered by zero weather and high winds. At 10:30 p. m. three engine companies from Detroit were dispatched to the blaze. These were followed a few minutes later by three more engines. Later two more engine companies were ordered into service, making eight engines from Detroit battling the fire.

The 728 Military Police Battalion was rushed to the scene from Detroit to stand by in case the AAF warehouse started to go. However, good work by the firemen prevented the flames from getting into the AAF building. They put up a curtain of water from the roof of the warehouse using the combined pumping capacity of eight pumpers (four 1000-gallon and four 750-gallon) plus the warehouse fire pumps. Fire was so hot it set off sprinklers inside the warehouse.

Dearborn firemen put in over 3000 man-hours fighting the fire and Detroit firemen an additional 575 hours.

This was the largest and most spectacular fire the City of Dearborn has ever experienced. MAX O. LEE

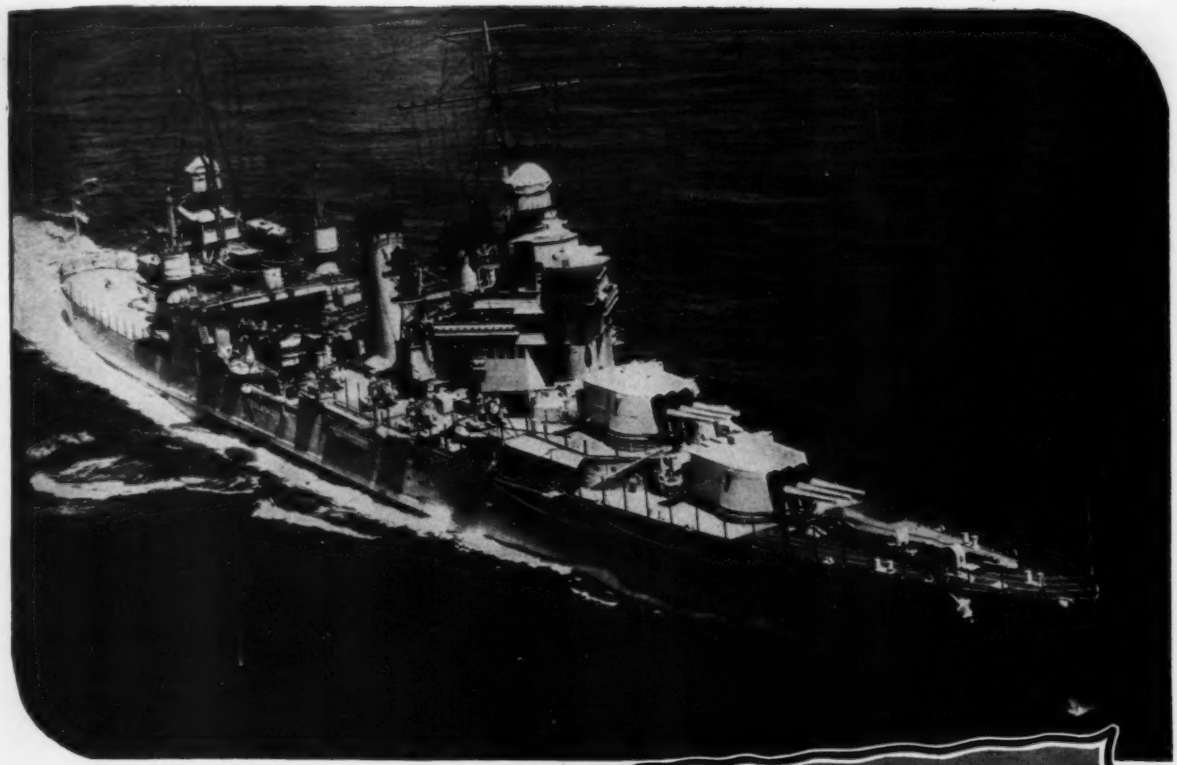
George A. Cumming Resigns from WPB

George A. Cumming, Chief, Fire Protection Section, Government Division, War Production Board, has resigned from that position and returned to his native state of California.

Mr. Nicholas A. Odum succeeds Mr. Cumming as Chief of the Fire Protection Section.

Scene at the Fire

This is one lumber pile of the Berg-Patterson Company. View does not show Smith-Orr sheds, lumber mill or lumber pile. Photo was taken fourteen hours after the fire started.



Official U. S. Navy Photograph.

"GHOST" SHIP RETURNS *to Fight Again*

Entirely false were the Jap claims that the USS Minneapolis was sunk in a Pacific sea battle.

The facts are — after the engagement in which the USS Minneapolis accounted for three Jap ships, flames enveloped her bow from waterline to super-structure, other serious damages were caused by torpedoes and shells from enemy warships. The fire was quickly extinguished by the ship's efficient fire equipment. Damages were promptly repaired and she rejoined her fleet — a completely restored "ghost" with renewed fighting punch, ready again to seek and destroy the enemy.

National Foam Fire Fighting Equipment has been adopted and is serving extensively aboard U. S. Navy ships where it has proved its efficiency in extinguishing fires — saving valuable lives and ships.

National Fire Foams are providing fire protection for most oil refineries and many other important industries.

BACK THE ATTACK
BUY WAR BONDS

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for the use of Fire Departments to meet all types of fire fighting requirements. Complete engineering service available.

The experience of our engineering department is at your service.

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Specializing in Foam Fire Protection

Packard Building, Philadelphia 2, Pa.

"The Superior"
A MODERN and PROVEN
LIFE NET

The SUPERIOR LIFE SAVING NET is stronger than any other, because of the tested breaking strength of 1,800 lbs. of each individual rope.

The direct pull shock absorber system eliminates all friction and its greater resiliency provides for a safer, easier landing

Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

For the utmost in LIFE SAVING VALUE . . . "SPECIFY SUPERIOR".

For ECONOMY, have your old net converted into a "SUPERIOR".

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Other SUPERIOR Products:
Training Nets and Structures
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Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

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For Practical Discussion of Current Fire Department and Fire Management Problems

PREVENTION OF ACCIDENTS TO FIRE APPARATUS AND PERSONNEL

THE discussion in this round table is a continuation of that which appeared in the April issue of FIRE ENGINEERING on causes of accidents to apparatus and personnel.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject on next month's subject, which appears in the box on the following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40 Street, New York 18, N. Y

Discussion of the Question

H. R. Chase, Chief, Miami, Fla.: The principal accidents to the personnel of the Miami Fire Department during the past two years have been such that we do not know of any way to prevent them other than to use due caution at all times. Our accidents have consisted of accidental burns, caused by falling tar or other firebrands, burned hands, in some cases caused by radiated heat while in others, by grabbing hot metal while overhauling at fires, etc.

We are happy to state that our accidents to fire equipment have been negligible for the past two years. We attribute this fact strictly to the reduction of speed of our equipment. We have a strict rule that is followed very well and that is that equipment shall not exceed thirty-five miles an hour. We have not only been able to cut down on accidents, but have also materially saved on the upkeep of our equipment. Our tires are lasting much longer than ever before, and the equipment is not required to be in the shop as often as when we had unlimited speed limits. We have found by the reduction of speeds when responding to calls for fires that the losses have not materially increased. While this reduction of speed is primarily caused by the abolition of sirens to begin with, we have been so well satisfied with the results that even though sirens are allowed, we maintain the lesser speed limits.

John F. Healy, Chief, Denver, Colo.: It is my belief that injuries caused by falls lead the list, followed by minor injuries caused in part by carelessness on the part of the individual injured.

The prevention of accidents could be brought about by conducting a "safety first" campaign within the department with every man taking an interested part.

The principal cause of accidents to apparatus has been due to negligent and careless driving on the part of civilians where they have been involved in accidents with our equipment.

To prevent these accidents there should be strict enforcement of the laws of the municipality concerned and, in addition to this law enforcement, there should be more stringent requirements placed on each applicant for a driver's license.

E. N. Whitaker, Chief, Tacoma, Wash.: We have not had any accidents to personnel in the department other than unavoidable accidents at fires due to falling glass, etc.

I would suggest that all department drill instructors stress safety first in all training. This is what we have done and as a result have not suffered an accident to personnel other than at fires.

Accidents to apparatus are caused by motorists who do not heed the warning signals of our apparatus. I believe there should be more stringent motor laws covering emergency motor equipment.

I let the officer in charge of a company pick the men best qualified to operate pumps, wagons and ladder trucks. The officer is held responsible for the speed apparatus is driven. It is my opinion that the company of-

HERE IS THE PROBLEM

What have been the principal causes of accidents to personnel in your department during the past two years?

What methods do you suggest for preventing similar accidents in other departments?

What were the causes of accidents involving fire apparatus in recent years in your department?

What suggestions would you make for preventing accidents in other departments?

If you have had no accidents, or less than the average, to what do you give credit for this good performance?

The Story of the Kid from Port Chester

"Dear Mom," he writes, "Today I got a thrill.

"We were going ashore to attack . . . going ashore in a barge when just as we were reaching the beach something hit us hard. We turned over and everyone of us and all the equipment in the barge took a nose-dive in the drink.

"Fortunately it wasn't deep, and we were able to walk ashore and drag the equipment with us. We were assigned to take some of the pieces of equipment and dry them out as best we could. Which we did. And never thinking they'd be any good again, we tried to get them going.

"Much to everyone's surprise the darn things started up and worked. But if you think that was a surprise, how do you think I felt when I noticed that this equipment came from Port Chester . . . Homelite Portable Generators, *made in my home town.*"

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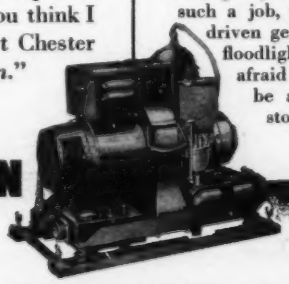
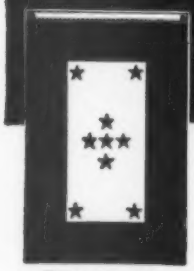
PORT CHESTER, NEW YORK

Some day it's going to pour

Yes, it will be raining cats and dogs . . . but nevertheless important construction and emergency repair work must be done. On such a job, the portable gasoline-engine-driven generator you need to operate floodlights or power tools cannot be afraid of the rain. The answer will be a Homelite. They can't be stopped by rain.



HONOR YOUR SERVICE MEN



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Today — right now — there are many American communities and municipalities which sorely need additional fire fighting facilities to give their citizens adequate fire protection and are unable to secure these because of war conditions.

Search your own department or fire stations for any surplus apparatus or old usable equipment and offer it for sale through the classified "Opportunities" columns of this magazine. Rates are low—only $5 per inch.

FIRE ENGINEERING
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ficer is the person best qualified to make the decisions on who should operate equipment as he has personal contact with the men. Since we have started this procedure our accident rate has been cut to nil.

C. M. Johnson, Chief, Knoxville, Tenn.: The principal accidents to personnel are caused by activities in the extinguishments of fires, by burns, cuts, bruises, sprains, etc.

The firemen are thoroughly trained in fire fighting evolutions and accident prevention, and while this undoubtedly reduces accidents, this type of injury can never be fully prevented.

The causes of accidents involving fire apparatus in recent years are slick streets and traffic congestion. There has not been an accident in Knoxville in the last fourteen years involving the collision of two pieces of fire apparatus.

This is due to the system we have for responding to alarms, namely, traveling on designated streets, keeping apparatus fully under control and using all precautions when entering intersections and making turns.

Fire Department rules and regulations provide that a speed of not more than twenty-five miles per hour shall be maintained in congested areas; not more than thirty-five miles per hour at any time and not over fifteen miles per hour in turning corners and slower if necessary for safety. Operators shall enter intersections cautiously and descend grades with apparatus under full control.

A. Brown, Chief, Birmingham, Ala.: In 1942 nineteen members of this department were injured. One member suffered a broken leg at a fire and was off two months. The balance were, in general, minor injuries and burns such as are usually expected on this job.

In 1943 twenty-five members were injured. One member suffered a broken leg and severe burns when a chimney fell and buried him in the debris. He was off duty for six months.

The balance were, as in 1942, general run injuries. Quite a number of the above in both years were caused by carelessness on the part of the member injured.

I know of no method of preventing similar accidents other than to caution members to be more careful, and you know how little good that does.

As for accidents to apparatus, we have had only one major one.

On responding to an alarm, one of our 750-gallon pumpers was hit broadside by a coupe driven by a woman who ran through a red light at excessive speed. She was supposed to have been drinking. The impact smashed the instrument panel and broke the pump. The damage amounted to about $1,200.00 and the pump was out of service for six months.

I attribute the fact that we have had no accidents other than the above to good driving, and also the fact that this department did not discontinue the use of sirens. Our drivers make good time and people in general give us a good right of way.

William F. Cowden, Chief, Philadelphia, Pa.: The majority of accidents to personnel in this department, we find, are caused by the motoring public and trolley cars failing to heed traffic signals and fire apparatus signals, not slowing down and stopping at intersections, etc., and illegal parking.

The method of preventing similar accidents would be to strictly enforce traffic and parking regulations.

The majority of accidents to apparatus occur while responding to alarms of fire.

G. R. McAlpine, Chief, Oklahoma City, Okla.: The accidents in our city to personnel and apparatus have been at a minimum. However, accidents to personnel have been confined almost entirely to nails and falling glass. To prevent injury from nails, a fireman should always wear full length shoes with good thick soles, and better yet, soles that have a metal innersole. The upper part of the shoe furnishes protection for the ankle, for ankle sprains are a common form of injury.

A number of accidents caused by falling glass can be eliminated by first protecting the body with the proper type of bunker clothing and the head with a helmet. This will furnish protection for the head, neck and face. I know that the custom of wearing helmets is as old as the hills, and every fireman knows it is an important part of his protective clothing, but sometimes helmets become tiresome and the men leave them off. Some small cities or towns do not furnish helmets. I believe that every city or town should furnish a comfortable type of fire helmet and I think it should be the duty of the chief to see that they are worn.

Breaking glass from transom lights or upper windows is quite often the cause of injury to the hands and arms. These accidents are caused in many cases by broken glass sliding down the handles of pike poles or other tools that are being used to break out glass windows. These accidents can be easily prevented by standing to the side and striking the window first at the top. In this way the glass will not slide down the handle of the tool and cause an injury.

There is another injury that comes from flying glass, and it will invariably happen to a new man, and that is one caused by breaking wire glass windows. When a wire glass window is struck with a tool, a shower of fine scaly glass will rebound from the blow, and if you are standing directly in front or beneath the window, you will receive injury to your eyes. This

HERE IS THE PROBLEM FOR THE NEXT ISSUE

With regard to replacement of pneumatic tires on (a) heavy apparatus; (b) light apparatus.

1. How do you determine when tires should be replaced?

2. If a replacement program is in force requiring replacement of tires after a definite period of service, what period (in years) have you established?

3. How has your plan worked out?

Include FIRE PROTECTION by CARDOX

War has taught many lessons. One, for example, that merits high rating on any planning program is this: ENGINEERED VICTORY over production can be lost without an engineering victory over fire!

Whether your planning is concerned with war production, conversion, or utilization of new processes, an individually engineered Cardox Fire Extinguishing System offers many distinct advantages for protecting critical fire hazards.

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HOW CARDOX SYSTEMS PERFORM

Fire in any of these hazards is detected visually or automatically.

An alarm sounds, giving personal notice to leave the fire zone. Time is allowed for complete evacuation of personnel.

A timed mass discharge of non-damaging, non-contaminating cold Cardox CO_2, released into the fire zone, reduces oxygen content of the atmosphere below combustion requirements and cools out the entire fire. Cardox CO_2—in pounds or tons, as required—is discharged into the fire so rapidly that burning time is usually cut to a very few seconds.

Extinguishment of this kind is possible with a Cardox System through engineered application of carbon dioxide maintained at a standard storage temperature of 0° F. The advantage of uniform extinguishing performance can thus be provided indoors or out . . . for large or small fires . . . for one or a number of hazards.

If you would like more information for use in solving current war plant fire protection problems—or for consideration in connection with post-war planning—write for Bulletin 1954

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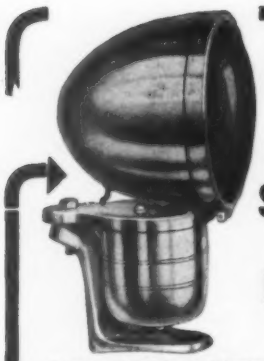
NON-DAMAGING FIRE EXTINGUISHING SYSTEMS



NOW, SPEED TO FIRES IN SAFETY WITH AN 06 MASTER-LIGHT!

Chief, let this light show you that "Wig Wag MASTER-LIGHTS" mean *faster, safer, quieter* runs! Powerful sweeping red beam warns traffic 1,000 feet ahead—clears way in any weather. Fixed lamp head cannot stick in snow or sleet. Effective even in daylight!

CLEARS YOUR SIDE OF STREET

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should be watched, and all new men should be instructed as to the danger.

We have been fortunate in our city in not having any major accidents involving fire apparatus. We have had some minor ones caused by the apparatus driver approaching an intersection where he is going to turn at a high rate of speed. The apparatus may skid, striking the curb, damaging the tires and sometimes the wheel and axle alignment.

The driver may turn the corner too quickly and strike the curb with the rear wheels, doing damage to wheels, tires and axles. This is not a serious type of accident, but is a common one, and it costs the city money and puts the apparatus out of service.

To eliminate such accidents and avoid major accidents I believe a definite speed limit should be observed, and this should not be in excess of thirty-five miles per hour. I also believe the company commander should be held jointly responsible with the driver in observing the speed limit. All apparatus when entering an intersection to make a turn should be slowed down to ten miles per hour.

It is difficult to control the speed of apparatus going to fires, but I believe it can be done if the chief officers will observe the rule, by holding their drivers down to the designated speed. In many cases if the chief or his assistants would drop in behind the apparatus and follow it to the fire, he can check the speed of the apparatus.

William J. Sudeith, Chief, Saint Paul, Minn.: The principal causes of accidents are carelessness and haste.

The captain of each company makes out a written report of each accident and also states how it could have been prevented. These reports are discussed in our school. This method has had some effect in cutting down the number of accidents.

One of the principal causes of accidents to apparatus is going through stop signs while responding to alarms.

In our school we warn the men that when nearing stop signs or stop signals they are to approach with caution and stop if necessary. Officers also are instructed that when returning from fires they must abide by all traffic laws and drive the same as any citizen.

Edw. J. Cannon, Chief, Norfolk, Va.: During the past two years, the principal causes of accidents have been: nail wounds and abrasions while working in fire or in burned buildings, sprains, strains of ligaments and muscles, burns from fire, and foreign matter in eyes.

We have been very fortunate in the matter of accidents in the past two years, and a very small percentage of our men have lost time from such causes. Drill in safety work and extreme caution on the part of the men have reduced our accidents to an almost irreducible minimum. As an added statement, more time is lost in fire departments by members with colds and flu than lost by accidents.

Failure on the part of persons operating motor vehicles to stop, or slow down on hearing siren on fire apparatus; the increased traffic in Norfolk, due to wartime conditions; and the narrow streets in older sections of town have caused most of the apparatus accidents.

I have instructed my drivers in the point that it is more important to arrive at a fire in condition to operate than to take unnecessary chances, with a possibility of not getting to the fire.

Credit for our low accident and injury rate is attributable to constant emphasis on operating with care, consistent with good fire fighting practices.

Edmund B. Lewis, Chief, Scranton, Pa.: The principal causes of accidents to personnel in our department have been falling glass and nails. These accidents are unavoidable.

Skidding on ice or wet rails is the principal cause of accidents to motor fire apparatus. We make a practice of driving carefully to avoid such accidents.

J. E. Parrish, Chief, San Diego, Cal.: Most of the accidents to personnel in our department can be attributed to the fact that we are short of men for handling hose lines, ladders, etc. If the manpower shortage could be done away with, many of these accidents could be prevented.

Congested traffic and failure to abide by traffic laws on the part of motorists account for the majority of accidents to apparatus. I am in favor of strictly enforced traffic laws.

We have had below the average of accidents which I believe should be credited to intensive training of personnel.

L. M. Funk, Chief, Dallas, Tex.: Carelessness on the part of inexperienced and untrained men who have replaced trained personnel drafted into the armed services, accounts for many of our accidents. This includes falling from pole in station, slipping when mounting apparatus, etc.

I am in favor of an intensive "safety first" program, or better still a return of experienced personnel.

Accidents to motor apparatus are caused by the public's disregard for traffic laws. I believe that stricter enforcement of more stringent traffic laws is in order.

We have cut down the speed of apparatus while enroute to fires, although this has materially impaired the department's efficiency. We find it necessary to sacrifice efficiency to assure safety for our firemen.

Edw. Grenfell, Chief, Portland, Ore.: Most of our accidents have occurred when answering alarms. I believe that speed limits should be placed on fire apparatus.

We have reduced speed to thirty-five miles an hour and five miles per hour when entering through streets or going through red lights. We have reduced speed to twenty-five miles per hour in congested areas and thirty-five miles per hour in the less congested areas. All fire apparatus is routed to fires to avoid collisions between fire apparatus.

Connie O'Sullivan, Chief, Memphis, Tenn.: The only injuries we have had have been minor ones received on duty, either in the engine houses or at fires. They are varied and first aid cases only.

In order to prevent such accidents the men should be provided with the proper work clothing, helmets, turnouts, boots, gloves, etc.

FIRE protection is doubly necessary in times of modern war. During the rubber emergency which began with the Japanese seizure of natural rubber areas shortly after Pearl Harbor, Republic Rubber has continued to build millions of feet of fire hose, Jap or no Jap. Relying on their prewar experience with synthetics, Republic has designed and produced fire hose and numerous other products from man-made rubbers. The ingenuity and determination in American industry, overcoming natural rubber shortages and other difficulties, is the home front share in defeating the Axis.

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The element of time is of first importance in the successful treatment of burns. If a burn is treated within 15 minutes after it occurs, the probability of blister formation is reduced to a minimum. But if time is wasted before proper treatment is started, serious complications and infection may follow.

When using Gebauer's TANNIC SPRAY in the treatment of burns, the factors involving time-loss are eliminated. This preparation is a stable solution of tannic acid ready for immediate use. Packaged in a sturdy amber bottle having an automatic dispensing cap, which permits the projection of the solution in the form of a fine jet stream. Upon application the solvent evaporates rapidly, covering the burn with an evenly applied, dry and flexible film of tannic acid.

Gebauer's TANNIC SPRAY is a practical *first* first-aid treatment for first, second, and small area third degree burns. Write for literature.

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The majority of accidents to fire apparatus were caused by wet and slippery streets.

We have kept accidents to apparatus down by selecting and training men to drive the apparatus and by observing strictly the traffic laws.

W. G. Lutkey, Chief, Oakland, Cal.: The majority of accidents to motor apparatus were caused by too much speed. I would suggest that speed be cut down, and the apparatus conform with the local speed laws.

We attribute the fact that we have not had many accidents to the obedience of the men to the rules laid down by the officers in charge of training.

C. C. Killian, Chief, Fort Worth, Tex.: Accidents to personnel have been minor and are due to carelessness while operating at fires.

I believe that common sense safety rules should be instituted and carried out. It is necessary to instill in each member the importance of safety to themselves and the department.

The failure of the general public to appreciate the danger of moving fire equipment, inadequate warning systems, narrow congested streets are all causes of accidents to apparatus. Our accidents have been with vehicles other than our own, and none of them have been listed as major.

To prevent accidents to motor apparatus, good warning signals should be provided. The speed of equipment should be limited and the apparatus routed as far as possible on wide, clear streets. We limit our equipment to forty miles per hour at all times with the exception of peak periods and then fifty miles on main boulevards only.

J. A. Scrugg, Chief, Nashville, Tenn.: Most of the accidents to personnel are caused by strain and by nails sticking in feet.

I believe the men should be taught to be more careful in straining or lifting and should be required to wear metal inner soles in boots.

Accidents to apparatus are caused by failure to hear sirens and warning signals. I believe more rigid enforcement of traffic laws should be encouraged.

Our drivers are urged to use caution at blind corners or where traffic lights are against them.

Clarence W. Brown, Chief, Wichita, Kans.: Most of our accidents to personnel have been caused by high voltage overhead wires. I believe in proper training and emphasis on safety first.

Negligence on the part of the public has caused the majority of accidents to apparatus. I believe more education of the public is in order.

Thomas J. Phelan, Chief, Trenton, N. J.: Most of our accidents to personnel have been traffic accidents. To prevent similar accidents, I would suggest that speed be cut down in responding to alarms and that efficient warning signals be used on apparatus.

Our accidents have been few. We have discarded the theory of reckless speeding being essential in response of apparatus. Our policy has been to insure the arrival of all apparatus dispatched. Speeding causes accidents resulting in the non-arrival of apparatus.

Howard Travers, Chief, Baltimore, Md.: Most of the accidents to personnel have occurred at fires. I do not believe they can be avoided.

Failure on the part of operators of motor vehicles to give right of way to apparatus responding to alarms of fire account for the majority of accidents.

Joseph A. Kirby, Chief, Dayton, Ohio: Most of our accidents to personnel are due to back drafts, minor injuries. Due to the large turnover of personnel, there is insufficient time to train the men properly. The majority of accidents have occurred because of the

U. S. Army Air Forces Photo

Fire Lassies Take Over

The ladies have taken over the entire fire station at Scott Field, Ill., the Army Air Forces Training Command Radio School, and they are doing a mighty fine job, and are full-fledged fire fighters. Left to right are Elsie E. Hollenkamp of Trenton, Ill.; Evelyn Peters, also of Trenton; Arline L. Pressel of Lebanon, Ill.; and Mrs. Leona M. Sprehn of Belleville, Ill.

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SPRINKLER SUPERVISORY AND WATERFLOW ALARM SERVICE

Supervisory alarms, indicating impairments of sprinkler systems . **123,446**

Waterflow alarms, indicating fire conditions or serious leaks . . . **2,828**

Percentage of fire and water damage losses to insurable values of protected properties . . . **2/100ths of 1%**

During the past ten years, subscribers to A.D.T. Sprinkler Supervisory and Waterflow Alarm Service have enjoyed 99.98% IMMUNITY FROM FIRE AND WATER LOSSES.

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WATCHMAN SUPERVISORY AND MANUAL FIRE ALARM SERVICE

Investigations of failures of watchmen to signal on schedule . . . **211,134**

The total number of signals supervised was approximately 321,322,270; hence, the watchman patrol efficiency was **99 93/100%**

Manual Fire Alarms handled . . **1,805**

Percentage of fire losses to insurable values . . . . . **6/100ths of 1%**

During the past ten years, subscribers to A.D.T. Watchman Supervisory and Manual Fire Alarm Service have enjoyed 99.97% IMMUNITY FROM FIRE AND WATER LOSSES.

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BURGLAR AND HOLDUP ALARM SERVICE

Burglars captured as a result of A.D.T. alarms **303**

Percentage of losses in attacks on A.D.T. protection to insurable values protected . . . . **5/1,000ths of 1%**

During the past ten years, subscribers to A.D.T. Burglar and Holdup Alarm Services have enjoyed better than 99.99% IMMUNITY FROM BURGLARY AND HOLDUP LOSSES.

A.D.T. Central Station Protection Services are available in all principal cities of the United States. Booklets describing the services and full information will gladly be sent upon request. Write to A.D.T. Executive Offices, 155 Sixth Avenue, New York, N.Y.; or your nearest A.D.T. Central Station Office.

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CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

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A NATION-WIDE ORGANIZATION

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"Replace the Wet Hose"

All that the rubber lining of a fire hose can do—whether made from natural or synthetic rubber—is to provide a smooth, flexible, leakproof waterway. The burst pressure and abrasion resistance of the hose—its behavior in use—the way it handles and loads—are all entirely determined by the quality of the cotton jacket.

Eureka uses only long staple cotton cord, weaves it on exclusive looms under controlled conditions that are designed to produce the highest quality jackets in each respective grade.

A long life of dependable service is therefore built into every foot of Eureka Fire Hose... beyond this, Eureka can only recommend the kind of treatment that will give you the full benefit of all the lasting qualities of the hose. These sound and worthwhile recommendations have been compiled in a 13-point wall chart on the care of fire hose, copies of which will be gladly sent on request.

Regardless of the make of fire hose you are using—and whether its lining is made of natural rubber or synthetic rubber—wartime conditions make it more important than ever before that the hose be made to give you the longest possible dependable service. The Eureka wall chart, "Directions for Care of Fire Hose," gives valuable suggestions for treatment that will better protect the hose you use. Request your copy or copies now.

EUREKA FIRE HOSE

Division of United States Rubber Company

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inability of the new men to take proper care of themselves.

We had one major accident to fire apparatus caused by the driver of a private vehicle neglecting warning signals, lights, etc., of the apparatus.

I believe it necessary to pound home to the public respect for warning signals, traffic signals, while apparatus is responding to fires.

We attribute our good performance to the fact that chauffeurs in the department have been constantly reminded to make allowance for the public's lack of respect for traffic laws, emergency runs, etc. Consequently they are on the alert at all times to prevent an accident.

H. C. Root, Chief, Springfield, Mass.: Carelessness and haste are the principal causes of accidents to personnel.

I would suggest that continual drills be held and that the men be cautioned against trying to do the evolutions too fast.

Misjudging distance and condition of roadway account for the majority of accidents to apparatus. To prevent such accidents I believe that drills should be held continually and accidents talked all the time.

A. F. Taylor, Chief, Richmond, Va.: We have had the usual fire department accidents such as nails in feet, etc. I know of nothing that would prevent these as we do not have an unusual number.

Most of the accidents to apparatus are traffic ones. These are usually unavoidable, and there is little that can be done.

George T. Morgan, Chief, Wilmington, Dela.: We have had no accidents to apparatus during the past two years.

Most of the accidents to motor apparatus are due to carelessness and new operators.

I would suggest that the draft boards cease calling our men into service, thereby giving us time to make our men more familiar with our apparatus and allowing them to get longer service and experience.

M. J. Fleming, Chief, Albany, N. Y.: The principal causes of accidents have been falling on ice covered stoops, stairways, pavements; cuts from glass in forcible entry work; and the normal run of accidents.

Accidents involving fire apparatus were due to the failure of civilians to give apparatus the right of way.

I believe all traffic laws should be enforced, and the public taught to give the apparatus the right of way. Speed of apparatus should be controlled and the apparatus kept under control at all times.

We have had no accidents in the last two years. On approaching an intersection where red light is set against apparatus, it should be slowed down, sirens should be sounded and apparatus kept under control so it could be stopped if necessary. Drivers should be prepared for the unexpected.

Edward H. Siller, Chief, Yonkers, N. Y.: The principal cause of accidents to personnel in our department is faulty construction of buildings. To prevent this, I am in favor of the adoption of a modern building code.

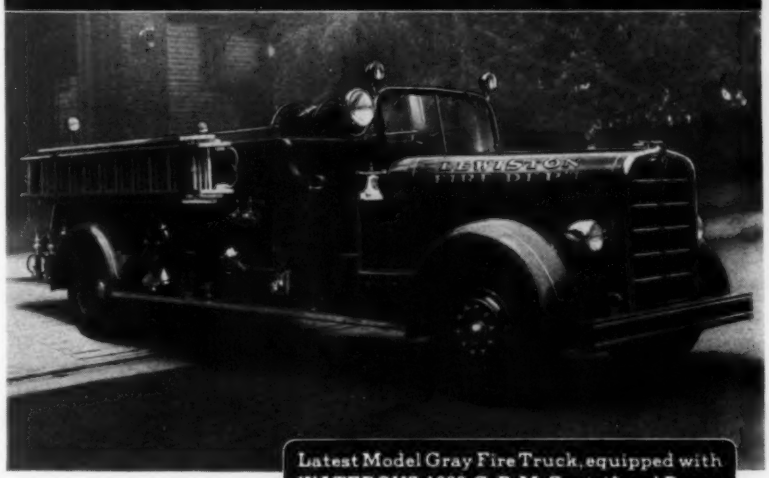
Reculess driving on the part of citizens is the cause of our traffic accidents. In this regard, I am in favor of heavier penalties, including jail sentences.

What's Burning

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of April, 1944. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending April 30	Losses in Thousands of Dollars
Glasglow, Ky.—Two bldgs., Public Square, housing offices of insurance co., credit assn., dental office, drug store, damaged..	205
Connellsville, Pa.—Six bldgs., housing tons of rubber, chemicals, and machinery of Nic-Co Rubber Co. destroyed	65
Williamsport, Pa.—Iona Temple lodge hall, business block destroyed	65
Lafayette, Ind.—Rund Packing Co. plant damaged	60
Nashville, Tenn.—An entire block destroyed, including furntiure co., seed and hardware co., poultry hatcher total loss; partial loss to another furniture co. and salvage co. Varying damage to other adj. bldgs.....	850
Edmonton, Alta.—Heavy equip. repair shop of Northwest Div. U. S. Engineers in northwest Edmonton, damaged.....	450
Portland, Me.—Mfg. plant of F. O. Bailey Co., Inc., damaged.....	50
Morton, Miss.—Entire business block occupied by bus station, service station, hardware store and grocery store destroyed	50
Camp McCoy, Wis. — Library, auditorium and cafeteria at Camp McCoy service club No. 2, damaged.....	80
San Francisco, Cal.—Waterfront warehouse damaged	750
Joliet, Ill.—Garage of Elwood Ordnance Plant, south, damaged	50
Wellston, Mo.—Wellston Theatre destroyed, restaurant and Commerce Jewelry & Locan Co. damaged	125
Oregon City, Ore.—Molalla I. O. O. F. bldg., housing drug store, dental offices, grocery store, dry goods store, ration board office, destroyed	80
Vancouver, Wash. — Vancouver Airport hangar and three planes destroyed.....	170
Cobleskill, N. Y.—Grange League Federation Store damaged	125
Astoria, Ore.—U. S. Navy hangar, half dozen trainer planes destroyed.....	250
Cottage Grove, Ore.—Capital Lumber Co. destroyed	60
Stewartsville, Ind.—Combination grade and high school destroyed	80
Ranger, Tex.—Paramount Hotel damaged..	50
Los Angeles, Cal.—Interstate Cotton Seed Co. plant damaged	50
Lexington, Ky.—Collins bldg, occupied by Myers Bros., Inc., National Printing Co., damaged	110
Cincinnati, Ohio—Acme Radiator Shield Co. bldg., Sealfeld Paper, Behler Paper, Meinch Drayage Co., Charles Brockel & Sons wholesale grocery damaged.....	125
Lethbridge, Alta.—Clark Block destroyed..	75
Caribou, Me.—Powers Theatre damaged...	60
Conestee, S. C. — Warehouse owned by Henry P. Willimon and dwelling occupied by Robert Tatlor, destroyed.....	125
Beverly Hills, Cal.—Lawry's "Prime Rib" Cafe damaged	80
Kingston, Pa.—Baker Paint Co. factory destroyed	50
Lock Haven, Pa.—Store and apartment bldg. destroyed; three other bldgs. damaged in business district.....	225
Anchorage, Alaska—Anchorage air base, four planes, equip. damaged.....	250
Davula, Ga.—Bldgs. of Davula Consolidated School destroyed	50
Lansing, Mich. — Redman Bros. wholesale grocery warehouse destroyed.....	150
Grand Rapids, Mich.—Twentieth Century Recreation bldg., occupied as bowling alleys, billiard rooms and bar damaged..	80
Elizabeth City, N. C.—The Foreman, owned by W. B. Foreman; Derrickson Veneer Co., destroyed	450
Nome, Alaska—Odd Fellows Hall destroyed	50
Detroit, Mich.—Box factory of Braun Lumber Corp., destroyed	60
Ellwood City, Pa.—United Tube Corporation's Ellwood City plant destroyed.....	125
Glendale, Cal.—Three bldgs. at Grand Central Airport and seven planes destroyed..	425

The GRAY Slogan Is "More Gallons Per Minute Per Dollar"



Latest Model Gray Fire Truck, equipped with WATEROUS 1000 G.P.M. Centrifugal Pump

...and GRAY Depends on WATEROUS Pumps to Make Good its Slogan!

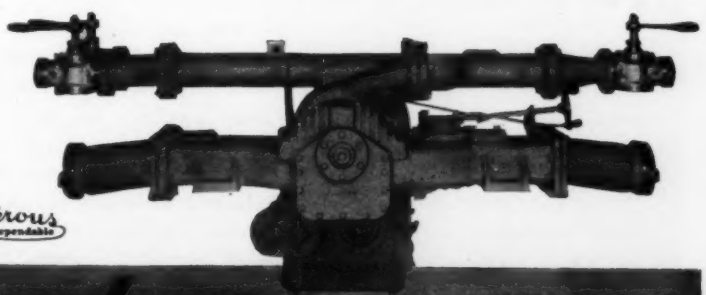
In the Northwestern States GRAY Fire Apparatus has an outstanding record. WATEROUS Pumps play an important part in the Gray slogan—"more gallons per minute per dollar".

WATEROUS gives you *everything* you require in a fire pump—dependability, high efficiency, long life. Specify WATEROUS on *your* fire truck!

Literature on Request

WATEROUS COMPANY • SAINT PAUL, MINNESOTA

Also Manufacturers of WATEROUS Fire Hydrants



WATEROUS

CENTRIFUGAL-ROTARY

FIRE PUMPS

REAL HEAD SAFETY

-for every alarm!

The M·S·A Streamlined FIREMAN'S HELMET

PROVIDING top safety, comfort and durability on normal fire-fighting assignments everywhere, this new and widely-popular M.S.A. Helmet qualifies on every count for the added demands of wartime service. Falling and flying objects, chemicals, and live wires are countered by strong, non-softening, high dielectric strength laminated bakelite construction. *Comfort* on-the-job is assured by light, well-balanced design and special features. For the facts — write for Bulletin No. DX-5, or ask for a demonstration!

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS and MEADE STS. . . . PITTSBURGH, PA.
DISTRICT REPRESENTATIVES IN PRINCIPAL CITIES

Welland, Ont.—Premises of Welland Machine & Tool Co. damaged..... 50
Gloucester, Mass.—Cape Ann Fisheries, Inc., damaged..... 70
St. Louis, Mo.—Bldg. of Schenberg's Market damaged..... 50
Schenectady, N. Y.—Garage of International Harvester Co., harboring twenty-two trucks and automobiles, damaged..... 50
Pasadena, Cal.—Pasadena Bowling Center, 12 bowling alleys, cafe and bar, Pasadena Elks Lodge club house, damaged..... 50
Lansing, Mich.—Three warehouse buildings occupied by Fowler Cartage Co., Kester-Reed Farm Equipment Co., Reniger Construction Co., Lansing Rag and Barrel Co., and others, destroyed..... 170
St. Louis, Mo.—Shed of Universal Car Loading & Distributing Co. damaged... 100
Oklahoma City, Okla.—Third and fourth floors of O. K. Transfer & Storage Co.'s storehouse destroyed..... 425
Munhall, Pa.—Block-long bldg. housing Carnegie Steel Corp offices damaged.... 80
Seattle, Wash.—Owl Drug Store, Feltman & Curme shoe store, damaged..... 60
Chester, Pa.—Bloomingdale Rubber Co. plant and two others damaged..... 60
Dallas, Tex.—Oak Lawn Villa destroyed.. 50
Hamilton, Ont.—A warehouse used by Canadian Canners, Ltd., damaged..... 125
Columbus, Kans.—Bldg. occupied by Garment Mfg. Co. damaged..... 50
Seattle, Wash.—Luckenbach Steamship Dock Pier D damaged..... 75
San Antonio, Tex. — Thompson Hayward Chemical Co. bldg. damaged..... 50
Woburn, Mass.—Three bldgs. of Wilmington Packing Co. plant destroyed..... 150
DuBois, Pa.—Jr. High School damaged.... 50
Gary, Ind.—Sears, Roebuck & Co. warehouse damaged..... 100
Elkhart, Ind.—The Rosen Bros. Clothing Store damaged..... 50
Boston, Mass.—Two hundred and twenty-five pleasure cruisers and yachts, the Frost Coal yard and adj. ship yard, destroyed.. 450
Eugene, Ore.—Full block occupied by Firestone Service and Sawyer Motor Co., destroyed..... 80
West Norfolk, Va.—Three bldgs. of Dunn Marine Railway damaged..... 50
Seattle, Wash. — Truetle Marine Railway damaged..... 50
St. Louis, Mo.—Bldg. occupied by La Mear Poultry & Egg Co. damaged..... 55
Flint, Mich.—Thompson's Restaurant, Kings Clothing Co., damaged..... 80
Buffalo, N. Y.—Bldg. housing Devoe & Raynolds Co., Inc., paint and wallpaper store; others damaged..... 80
Auburn Corners, Ohio—Auburn Township school destroyed..... 50
Oklahoma City, Okla.—Storage warehouse damaged..... 450
Portland, Ore.—Owl Drug Co. destroyed.. 50
Springfield, Mass.—St. George's Greek Orthodox Memorial Church damaged..... 60
Bushwood, Md. — Sacred Heart Catholic Church near Leonardtown, damaged.... 50
Tiffin, Ohio—Elevator of Tiffin Farmers' Cooperative, Inc., destroyed..... 50
Erie, Pa.—First Presbyterian Church, destroyed..... 170
Ellwood City, Pa.—United Tube Corp. plant destroyed..... 80
Clendenin, W. Va.—Two bldgs. at planing mill and lumber yard destroyed..... 50
Tring Junction, Que.—Dwelling, store, shoe smith's shop, converted hotel, damaged.. 50
Edmonton, Alta.—Mosery Ryder block damaged..... 125
Montreal, Que.—Two bldgs. at St. Catharine St., East, damaged..... 450
Brownsburg, Que.—Thirteen dwellings in business section destroyed..... 250
Fresno, Cal.—Parisian Laundry & Dry Cleaning Works destroyed..... 60
Madisonville, Ky.—Motor company and adj. structure, three automobiles destroyed.... 80
Portland, Me.—Commercial street warehouse, occupied by Hub Furniture Co., Rock Wool Insulation Co. of Maine, Inc. damaged..... 80
Timmins, Ont.—Seven bldgs. destroyed; five others damaged..... 150
Cornwall-on-Hudson, N. Y.—Several bldgs. of Cornwall Shipbuilding Co., Inc.; life rafts destroyed..... 800
Concord, N. C.—Bob's Laundry damaged.. 80
Westerly, R. I.—Three bldgs., Swift River Woolen Co. plant destroyed..... 50
Eagle Pass, Tex.—New high school bldg., destroyed..... 50
Galax, Va.—General Chemical Co., mill bldg., Gorsham Mines, destroyed..... 100
Victoria, B. C.—Sports Centre and Ice Arena damaged..... 60
Redding, Cal.—The box mill, 200,000 feet of shook, three trucks of Shasta Box Co. destroyed..... 80
Neponset, Mass.—Frost Coal Co. damaged 250

Former Chief George Johnson Dies

George L. Johnson, Fire Chief at Waltham, Mass., for thirty-four years until he retired in 1939, died suddenly at his home on April 12.

The former fire chief had been active, excepting for a cold which had kept him home most of the week. Since his retirement he served on the board of a state firemen's fund, under appointment from the governor.

Chief Johnson, son of a former chief of the Waltham Fire Department, was named second assistant chief of the department in 1898 and in 1901 was appointed to first assistant. In 1906 he was made call chief and two years later became the city's first permanent chief of the fire department.

During his service Chief Johnson saw the department grow from a staff of fifteen manning horse drawn apparatus to its present status as a modern motorized department with personnel of forty-eight men. When he retired the latter part of 1939, he was succeeded by the present chief, Bertram A. Neal.

As a member and officer of the State Fire Chiefs Club, and later an official of the International Fire Chiefs' Association, Chief Johnson was widely known. Appropriate to note is the fact that his death occurred on the thirty-eighth anniversary of the Chelsea fire, at which he directed the work of the Waltham firemen.

Chief Charles Brandt Retires

After more than forty-four years of service, fifteen of which he served in the capacity of head of the Sheboygan, Wis., Fire Department, Chief Charles W. Brandt has resigned.

Chief Brandt joined the department on December 1, 1899. In those horse and wagon days he was first an assistant driver and then a driver, and in 1905 was promoted to lieutenant. A year later, on December 1, he was made captain, and on August 1, 1916, he was promoted to assistant fire chief. He received his appointment as chief on March 12, 1929.

His successor as head of the fire department is Assistant Chief August Sokoll, who has been a member since 1909.

March Fire Losses

Estimated fire losses of $39,084,000 in the United States in March brought the total losses for the first three months of the year to $115,936,000, an increase of $15,814,000, or sixteen per cent over losses for the similar period in 1943, it was announced by W. E. Mallalieu, General Manager of the National Board of Fire Underwriters. The estimates are based upon incurred losses reported to the Board by member companies, plus an allowance for unreported and uninsured losses.

The March losses were less than one per cent below losses of $39,214,000 in March, 1943, which at that time was the highest monthly figure reported in eleven years, and two per cent higher than the losses reported in February of this year. Losses in the twelve months period ending March 31, 1944, totalled $396,049,000 as compared with $318,082,000 for the twelve months ending with March, 1943.

THE CIRCUL-AIR FIRE HOSE DRYER

DRIES HOSE QUICKLY, SAFELY, EASILY AND ECONOMICALLY

★

CONSERVES RUBBER

BY PROLONGING THE LIFE OF HOSE NOW IN SERVICE AND, BECAUSE OF ITS QUICK-DRYING RATE, LESSENING THE NEED FOR LARGE HOSE RESERVE FOR "RELOADS" WHILE WET HOSE IS DRYING, CIRCUL-AIR HELPS TO BUILD UP THE NATION'S RUBBER STOCK PILE.

PREVENTS MILDEW AND ROT

★

ELIMINATES COSTLY HOSE TOWERS

★

IMPROVES NEW STATION DESIGN

★

SAVES SPACE, WORK, TIME AND CRITICAL MATERIALS

A Peacetime Asset—A Wartime Necessity

Saves

Building Repairs and Construction Costs—and keeps ALL your hose ready for service ALL the time. Immediate delivery from stock.

Note Compact Size . . . and ease of loading and unloading.

CIRCUL-AIR USERS

Scores of new installations this year in villages and cities of 500 to 1,500,000 population . . . and in Navy Yards, Army Camps, Air Bases, Chemical Warfare Service—Arsenals . . . and most of America's largest AIRCRAFT, TANK ORDNANCE, SHIPBUILDING, ELECTRICAL, AUTOMOTIVE, TEXTILE and CHEMICAL FACTORIES.

★ *PRIORITY ASSISTANCE GIVEN IF NEEDED* ★

THE CIRCUL-AIR CORPORATION

6339 East Palmer ··· Detroit 11 Mich.

OVER TWO TONS A MINUTE!

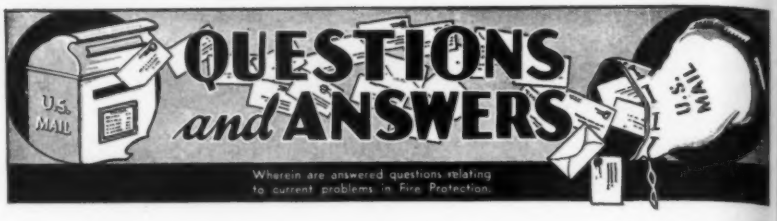
The small boy who carried water to quench the circus elephant's thirst had a cinch compared to the job of filling and carrying *100 5-gallon cans of water a minute* to quench a fire. But that's just what a Hale multi-service "ZL" does! At Underwriters' Capacity, *in one minute*, it picks up and carries 500 gallons of water weighing OVER TWO TONS and puts it on a fire . . . minute after minute and hour after hour, *with absolute dependability.*

Write today for specifications on the Hale 500-Gallon Type ZL Centrifugal Pump. (Standard catalog and new folders, carrying the *complete line* of Hale Fire Pumps, included on request.)

Hale Model ZL Multi-Service Centrifugal Pump

HALE FIRE PUMP COMPANY

CONSHOHOCKEN, PA.



Placement of Ladder

To the Editor:

A 75-foot ladder is to be placed against a 75-foot building. In the proper placing of this ladder the bottom is 17 feet away from the base of the building. How much does this ladder drop from the top of this building?

H. A. H.

Answer: When the base of the 75-foot ladder is moved to a point 17 feet from the building, the tip of the ladder will fall 1.94 feet short of reaching the top of the 75-foot structure.

This is solved by employing the old right angle triangle rule, namely, the square of the hypothenuse is equal to the sum of the squares of the other two sides.

This particular application, however, to find the height above the ground at which the ladder touches the building, is solved by taking the square of the length of the ladder (75 feet) and subtracting from it the square of the distance at which the base is placed from the building (17 feet). When we get this difference we abstract the square root and find the answer to be 73.04, which is the height of the building at which the ladder touches. From this point to the top of the 75-foot structure, the distance will be 75 — 73.04, or 1.96 feet.

Combustion of Alcoholic Liquids

To the Editor:

What per cent alcohol in wines, liquors, medicines, etc., will burn? What extinguisher would you use?

L. T. W.

Answer: An inflammable liquid does not burn; it is the inflammable vapors thrown off by such a liquid which burn.

Theoretically, a liquid with any quantity of alcohol in it would throw off alcoholic vapors which, when ignited, burn.

More important than this phenomena, however, is the fire point of such liquids. The fire point is the temperature at which a liquid throws off inflammable vapors in sufficient quantity to maintain combustion.

Here the temperature of the liquid is a major factor.

For example, alcohol will throw off vapors of sufficient density to maintain combustion at from 60 to 70 degrees F. Where the liquid consists of one-half alcohol and one-half water, the fire point is between 80 and 90 degrees F. If the mixture contains but 15 per cent alcohol and 85 per cent water, the fire point is approximately 200 degrees F, which is the boiling point of the solution.

For extinguishing fires involving alcohol or alcohol and water mixtures, carbon dioxide gas, foam (specially designed for alcohol fires), carbon tetrachloride, or fog may be used with effect.

It is frequently possible to dilute the solution which is afire by adding water so that the resulting temperature is low enough to reduce the mixture below the flash point.

A Long Stretch

To the Editor:

At a recent fire we laid out thirty-four 50-foot sections of 2½-inch hose, on the end of which we put a wye and on to this wye we attached two 100-foot lines of two 50-foot sections of 1½-inch hose each equipped with ½-inch nozzles. Pump pressure is 200 pounds. What is the nozzle pressure?

H. D. B.

Answer: The method of solving the problem you give is as follows:

First change the two parallel lines of 1½-inch hose to a single line of 2½-inch. This is done as follows:

100 feet of 1½-inch hose = 100 ÷ .074 = 1351 feet of 2½-inch.

Then we have two parallel lines of 2½-inch of the same length, which we must change to a single line of 2½-inch. The conversion factor is 3.6.

1351 ÷ 3.6 = 375 feet of 2½-inch hose.

Next combine the two ½-inch nozzles into a single nozzle.

This is done by squaring the diameter of each nozzle, adding the squares and extracting the square root of the sum.

½ × ½ = .5 × .5 = .25

2 × .25 = .50

$\sqrt{.50}$ = .707

The nearest size standard nozzle to one .707 inches in diameter is a ¾-inch nozzle, which has a diameter of .75.

Now the problem resolves itself down to a single line of 2½-inch hose 1700 + 375, or 2075 feet in length, equipped with a ¾-inch nozzle.

K for ¾-inch nozzle on 2½-inch hose is .042.

L, the number of 50-foot lengths of hose in the line, is 2075 ÷ 50, or 41.5.

N. P. = E. P. ÷ (1 + KL)
= 200 ÷ (1 + .042 × 41.5)
= 200 ÷ 2.843
= 70 pounds approximately

Note particularly that the formula for small diameter nozzle on 2½-inch hose was used in this solution. This formula differs from the standard formula in that 1 in place of 1.1 is used within the parenthesis.

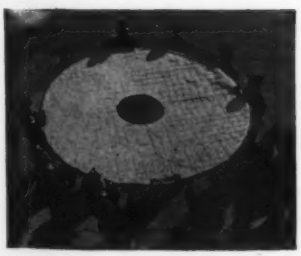
An alternate method may be employed, which is a little more lengthy, but which gives much better results. In this alternate method we find the value of K for a nozzle .707 inches in diameter,

This is a dramatic picture. A true picture. The man in the picture either lost his hold or jumped a few seconds after this photo was snapped. The net was busy rescuing others at this same fire. That brings up the point again: How many nets should an efficient fire department have? Should a few hundred dollars be saved at the expense of lives like this? It's something for you to answer, Chief.

Help.....

NEEDED AT ONCE!

MANY people, stranded at windows or on roofs, faced with the horrible torture of searing flames, become panicky and will either jump or fall, many times to their death. When faced with this problem, the action has to be fast and efficient. Many times there is not enough time to raise ladders or lower ropes. The department equipped with a life net is prepared to cope with the problem under any conditions. LIFE NETS are made for "on the spot" rescues as well as all other kinds.



The wise and efficient chief is the one who realizes that, while he has never had to use a net, it is no guarantee that he never will, and prepares for the emergency. He knows that his next alarm may be the one to call for rescue by net.

The ATLAS LIFE NET is the last word in modern, fast, speedy and efficient life-saving equipment. NOW is the time to make your decision — don't wait for the emergency to arise — then it will be too late. The lives of the people in your community as well as the lives of your own men may depend upon your decision. You can't afford anything but the best in life-saving equipment . . . and ATLAS is the best.

★ *For further information and data on ATLAS LIFE NETS and other safety equipment write to:* ★

ATLAS SAFETY EQUIPMENT CO., Inc.

26 WARREN STREET ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ NEW YORK 7, N. Y.

ROSS
RELIEF VALVES

1" to 2½" female threads

MODERN PUMPERS

demand these rugged, modern relief valves. Their simplicity and responsive dependability make them a must. Made in sizes from 1 inch to 2½ inches with capacities up to 1600 g.p.m. and pressures up to 750 lbs. Write for descriptive literature describing the complete line of

TRAILER PUMPERS

Trailer pumpers require valves made especially for this type of work, such a valve is the ROSS Trailer Pump Relief Valve. Made in sizes from 1 inch to 2½ inches with pressure adjustments from 10 lbs. to 750 lbs. and capacities from 0 to 500 g.p.m. at 120 lbs. pressure.

ROSS VALVE MFG. CO
INCORPORATED
P.O. BOX 595, TROY, N.Y.

which is the actual diameter of the nozzle equivalent to the two ½-inch nozzles.

To find the value of K for a nozzle on 2½-inch hose, take the fourth power of the nozzle diameter and divide it by 10. The fourth power of .707 is (.707 × .707 × .707 × .707) = .25.

.25 ÷ 10 = .025

Then nozzle pressure
= 200 ÷ (1 + .025 × 41.5)
= 200 ÷ 2.0375
= 98.1, or 98 pounds approximately.

Discharge = $29.7 \times d \times d \times \sqrt{P}$
= $29.7 \times .5 \times .5 \times \sqrt{98}$
= 73.5 gallons per minute approximately.

This is the discharge from each nozzle. The total flow will be twice as much, or 2 × 73.5 = 147 gallons per minute.

The friction loss in 100 feet of 2½-inch hose carrying 147 gallons per minute is 5.055 pounds.

Friction loss in 1700 feet will be 17 times as much or 85.935 pounds.

Large Diameter Hose at Hydrant

To the Editor:

We are to lay 450 feet of 2½-inch hose and 450 feet of 1½-inch. Which is the more practical, the 2½-inch or the 1½-inch at the source of supply? Would there be any noticeable results as to volume and pressure?

J. A. G.

Answer: If the nozzle were the same in the two layouts, there would be no difference in nozzle pressure on the two stretches given. However, it is usually better policy to use the large diameter hose near the source of supply, and the smaller diameter from the extension to the fire. Where additional hose is brought in afterward, and it is necessary to use a larger size tip, it would require less time to stretch from the 2½-inch hose to the fire than to disconnect the pumper at source and change the diameter of hose from 1½-inch to 2½-inch.

As noted above, there will be no noticeable difference as to volume and pressure if the same amount of 2½-inch and 1½-inch hose is used in each stretch.

Deluge Set Layout

To the Editor:

A pumper rated at 1250 gallons per minute is set up with three parallel lines, each 50 feet long, into a deluge set equipped with a 2-inch nozzle. Ninety pounds pressure is required at the nozzle. What pump pressure would be required and what would be the gallons per minute delivered? The pump is a centrifugal pump.

A pumper rated at 1250 gallons per minute is set up with three parallel lines each 250 feet long, into a deluge set equipped with a 2-inch nozzle. Ninety pounds pressure is required at the nozzle. What pump pressure would be required and what would be the discharge? The pump is also a centrifugal type.

R. J. H.

Answer: The solution to problem 1 which you submitted is as follows:

Discharge = $29.7 \times d \times d \times \sqrt{P}$
= $29.7 \times 2 \times 2 \times \sqrt{90}$
= $29.7 \times 4 \times 9.487$
= 1127 gallons per minute.

Engine pressure = nozzle pressure × (1.1 + KL).

Nozzle pressure is 90 pounds.

K for three parallel lines of 2½-inch with 2-inch nozzle is .190.

L = 50 ÷ 50 = 1

E. P. = 90 × (1.1 + .190 × 1)
= 90 × 1.29
= 116.1 pounds

The solution to problem 2 is as follows:

The discharge is the same as in problem 1, namely, 1127 gallons per minute.

E. P. = N. P. × (1.1 + KL)

Nozzle pressure is 90 pounds.

K = .190

L = 250 ÷ 50, or 5

E. P. = 90 × (1.1 + .19 × 5)
= 90 × 2.05
= 184.5 pounds

Capacity of Pump

In the March issue of this journal, on the Questions and Answers page, under the title of "Pressure and Discharge of Large Nozzles," a problem was solved involving a 500-gallon pumper pumping water through two 200-foot lines of 2½-inch hose each equipped with 1¼-inch nozzles. Our correspondent stated the pressure at the engine was 180 pounds, and from that point on the problem was solved showing that the pressure at each nozzle would be 38.1 pounds.

Such a pressure at each nozzle would give a total discharge from the two lines of over 1,000 gallons per minute. Of course, a 500-gallon pumper cannot deliver much in excess of 500 gallons. Hence the problem is not a practical one.

The discrepancy was noted by several of our readers including Clarence C. Rawlins of the New Bedford, Mass., Fire Department; Assistant Chief George Smok, West End Fire Company No. 2, Palmerton, Penna., and Horace B. Clark of North Granby, Conn. These three sharpshooters not only pointed out the impracticability of the layout given, but also provided detailed solutions to back up their arguments.

One for Our Readers

One of our readers, a fire marshal in a midwestern town, has asked for information regarding the new tempered plate glass doors used in stores. They are sold under the trade names "Tuf-Flex" and "Herculite."

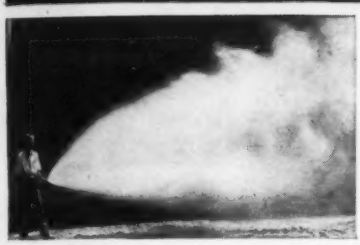
He is particularly interested in learning their reaction under actual fire conditions as well as the problems they present when forced entrance is required.

Any information on the subject will indeed be appreciated by the Editor.

Winchester, Ky. Funds are being raised to equip county fire department to be maintained in conjunction with city department.

Navy Fire Fighters use WaterFOG

WaterFOG is one of the new devices used by the Navy in its training schools for fire fighters. High velocity WaterFOG discharged from an SG-40 WaterFOG nozzle shielded these Navy Fire Fighters and quickly extinguished this raging oil fire.



High velocity WaterFOG from an approved SG-40 nozzle designed for the U. S. Navy by Rockwood Sprinkler Company.

* * *

Hundreds of industrial plants also have WaterFOG equipment,—both fixed piping installations and nozzles for hose lines.

What is WaterFOG?

WaterFOG is man-made fog, created by impinging streams of water from specially-designed Rockwood nozzles. It is particularly effective on oil fires, because of its great heat-absorbing area (much greater than in solid stream or spray) and its floating action.

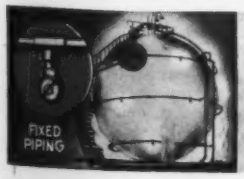
Instead of plunging quickly through the flame into the liquid, thus increasing vaporization — WaterFOG drifts gently into the combustion area, cooling both the burning vapors and the liquid surface, and then changing into steam, cuts off oxygen supply.

Many firms have given up more expensive, less certain fire-fighting methods to return to water. WaterFOG, economical, plentiful, prevents "flash-back", saves costly chemicals, lessens water damage and is a non-conductor. Rockwood installations are approved by Underwriters' Laboratories and Factory Mutuals. Write for bulletin 123.

ROCKWOOD SPRINKLER COMPANY
54 Harlow Street, Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

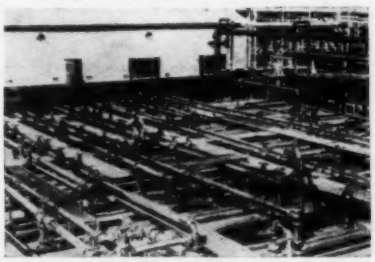
ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires



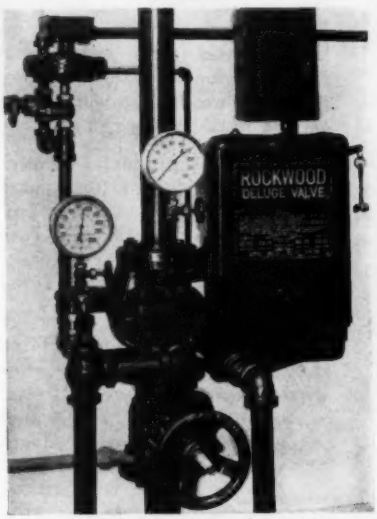
WaterFOG Installation Guards Refinery's Nerve Center

Vital and expensive equipment can be saved from the ravages of flammable liquid fires when a WaterFOG system of fixed piping is posted on guard.



For example, the manifold pits shown in the picture are protected by a WaterFOG system controlled by the Rockwood Dualguard Automatic Control.

Rockwood Dualguard Automatic Control



For fixed piping installations. Deluge Valves supply water to the WaterFOG system when automatic equipment detects fire.

Complete fire-protection effectiveness of a WaterFOG system depends upon proper engineering. Such factors as proper spacing of heads, distance between heads and hazards, etc. are important in determining correct particle size, fog pattern and velocity.

For this reason fixed piping installations should be engineered and installed by Rockwood engineers, who are authorities on hydraulics as applied to fire protection.

Typical WaterFOG Applications

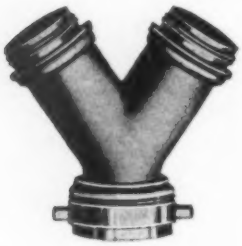
- quench and dip tanks
- paint shops
- transformers
- oil switches
- dryers
- oil storage

etc.

COLORED MOVIE! Executives of firms having flammable liquid hazards are invited to write for a colored movie (16 mm.) showing tests of Rockwood WaterFOG.

Rockwood Sprinkler Company, Worcester 5, Massachusetts.

FIRE DEPARTMENT
BRASS GOODS
Since 1892



FOR over 50 years, Powhatan has been making brass goods equipment for fire departments and has been a large factor in furnishing fire protection items for office buildings and factories. This long-term experience, evident in every one of our products, qualifies them as "the finest money can buy."

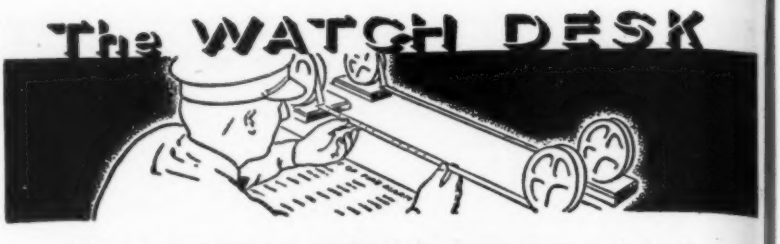
Many of the products, such as siamese connections, couplings, spanner wrenches, nozzles, etc., that make up the complete Powhatan line of brass goods equipment, are available with the proper priority rating.

The siamese connection pictured above is a good example of the sturdy construction, expert designing and careful workmanship that goes into every one of our products.

POWHATAN
BRASS & IRON WORKS
RANSON ★ WEST VIRGINIA
Phones 93 and 94—Charles Town, West Virginia

Established 1892

The WATCH DESK



Our inquiring reporter overhauls the firemanic news of the day

Mystery of the Mouse and the Milk!

In Birmingham (Ala.) Mr. G. R. Gray said his cat, stalking a mouse in a closet, scurried out, mewing and thoroughly scared, to give alarm as flames flared among the clothing. Gray, swung into action. The nearest thing within reach as an extinguisher was a pail of milk, which he promptly heaved onto the fire, dousing it.

Deponent saith not whether the feline started the fire and later starved from lack of lacteal nourishment!

* * *

Don't Tell It to Sweeney!

Wm. Patrick Sweeney, 28, of Washington (D.C.) according to our capital newsleuth, was a man of his word. At least, according to Miss Hilda Graves of the same city. Seems that Sweeney called on Hilda one night and—well, tennyrate Miss Graves asked him to leave. According to her, he not only refused to go but threatened **"to burn her out of the house."**

Miss Graves said she left to go to a girl friend's place while Sweeney remained behind in the apartment. Ten minutes later, according to her story, she heard the fire engines. Un huh—Sweeney was a man of his word. He touched off a closet-full of Miss Grave's clothing, destroying about $300 worth. And so-o-o, Mr. Sweeney was incarcerated and held for grand jury to tune of $3000 bond.

* * *

So Duranty Is Jealous!

Captain Thomas J. Maloney of the Quincy, Mass., fire department has a regular Duranty schnozzola when it comes to sniffing out fires. His olfactory perceptiveness (if you know what that means, we don't) is said to have prevented damage to several homes in Upland Road section of Quincy by a fire that started in home of Joseph Garity. Captain Maloney sniffed the smoke while along the road. What's more he was so sure of his sniffer that he pulled a box before even going to investigate the fire!

A few seconds later, flames shot into air through the roof of upstairs apartment occupied by Mr. Garity while the Captain warned the downstairs occupants Mr. and Mrs. Henry Worsdell. A "second" was sounded when the apparatus arrived.

Orchids to Captain Maloney—if he can smell 'em!

* * *

Stuffed Owl Relieves Firemen!

Things get nuttier and nuttier. The Watch Desk has recounted many odd jobs which the Brothers are asked to perform but this latest, from an Illinois contrib' (PWS) cops a prize.

Out in Springfield (Ill.) the worn and weary Brothers have tried for weeks to keep pesky starlings from swarming all over the business district and roosting in one particular building. They tried washing 'em out with high pressure hose streams—but their efforts were a washout; they put mucilage on the electric wires where the birds perched but only got stuck themselves; they strung mothballs around the building where the feathered nuisances "committed nuisances"—and the starlings took all the punishment but refused to take the hints.

At their wits' end help arrived in the shape of a couple of shopkeepers and an owl! the owl was stuffed. He now perches atop a fire escape on the particular downtown building that has been the scene of most of the trouble. He perches there, not giving a hoot about the starlings or anything. And we're told as long as he holds his perch the starlings won't congregate on the structure.

Anybody got another stuffed owl! We know a roosting place that wants to be rid of the pests!

* * *

High—(Too)—Wide and Handsome!

From Fremont (O.) we hear tell about the city officials who are in the fix of the fellow who built a boat in his garage and then found he couldn't get the darned thing outside — it was too large. Seems that the city purchased a nice new fire truck and in some way or other managed to get delivery—no mean task in these suffering days of WPB, if you ask us. When they got the truck they found it too wide to pass through the doors of the central fire station.

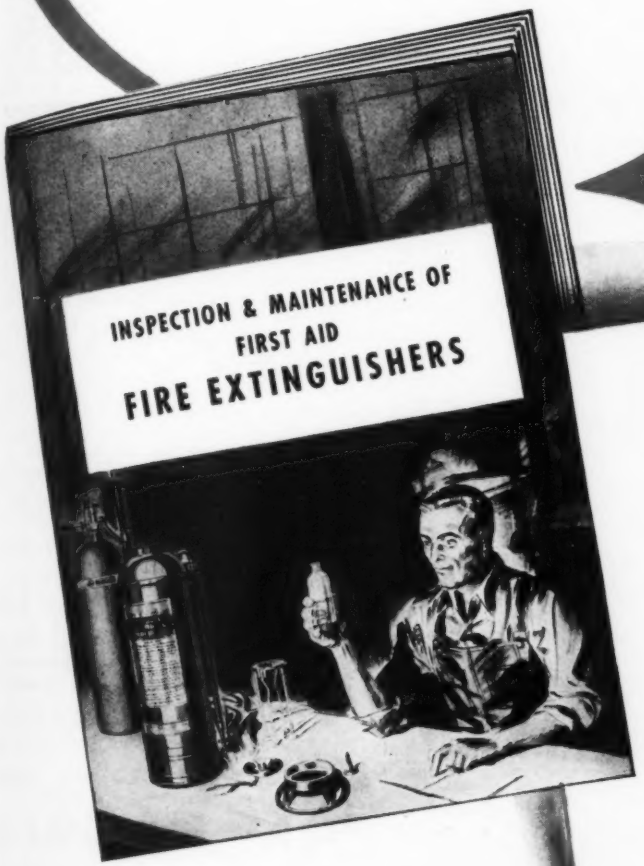
We hear, also that several years ago Fremont obtained a hook-and-ladder truck, and on this occasion, officials had to burrow into a hillside behind the station to give it room. This latest affair musta just about exhausted their patience—and fire station. (Thanks to the several who popped this in!)

* * *

Hot Off the Tape

Ben Riley, 73, colorful restaurateur, whose Arrowhead Inns were landmarks in New York City night life, perished when his restaurant in Yonkers (N. Y.) burned . . . Smoke from a ground floor fire in the big Board of Trade Building, Chicago (Ill.) caused an exodus of frightened office workers, some of whom clambered down outside fire-escapes from top floor offices, in chilly weather . . . When the Sea Cliff (L. I.) Village Hall burned, with all the Village's records, it took four companies of Sea Cliff firemen aided by four from nearby Glenwood, to control fire . . . Miss Ruth Harvey, 25, a practical nurse, whose

Let this FREE BOOK help you keep your fire-fighters ready for action!



PARTIAL LIST OF CHAPTERS

- WHO'S IN CHARGE?
- KEEPING RECORDS
- WHAT KIND OF EXTINGUISHERS?
- MARKING LOCATIONS
- MARKING THE EXTINGUISHERS
- INSPECTION OF EXTINGUISHERS
- VAPORIZING LIQUID EXTINGUISHERS
- CARBON DIOXIDE EXTINGUISHERS
- SODA-ACID EXTINGUISHERS
- FOAM EXTINGUISHERS

NEGLECT of your extinguishers may leave them damaged, clogged, under-charged —*unprepared* at the critical moment when you need them. Only careful examinations at fixed intervals can insure the full effectiveness of your equipment at all times.

To make it easy for you to organize your own maintenance system, Walter Kidde & Company has issued this booklet. The panel at the right gives some idea of its scope. Take the first step toward better fire protection now—write for your free copy of this booklet!

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JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE!

We can now supply old type ¾ Felt-lined Firemen's Boots.

JANESVILLE APPAREL CO.

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Fire Chief's Handbook . $4.00

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CASE-SHEPPERD-MANN PUBLISHING CORP.

24 W. 40th ST., NEW YORK 18, N. Y.

devotion to duty protected an infant in her charge from flames that seriously burned her, died from the effects, after a 14-day battle during which she unsuccessfully underwent 65 blood and blood plasma transfusions . . . Bodies of a brother and two sisters, dead several days, were found in fire-scarred cellar of their farm home near Albany in what is said to have been a double murder and suicide . . . One fireman was dead and three injured as result of general-alarm fire in Syracuse (N. Y.) that caused damage estimated at $300,000 to 5-story apartment building . . . Mrs. Virginia Brown, 35, Philadelphia (Pa.) died of burns received while she tossed her five children from second story window into arms of neighbors. None of children, who range from 10 months to 7 years, was injured . . . Firemen aren't often called to put out a flood tho' it's not unusual. However, the case of Archie Hollingsworth, Negro superintendent of New York apartment building was. He was pinched for turning in false alarm. His excuse was that when three calls to police failed to get help to check a flood in cellar he yanked fire alarm box for the Brothers. He got a suspended sentence. . . . There's deep trouble over'n Vandalia (Ill.); the regular fire siren on city hall has been 'sick' for several weeks and WPB has balked purchase of a new one, so the papers say. Well, when fire broke out in residence of Mrs. Julia Lape, only four of Vandalia's vamps responded; others failing to hear alarm. Loss $800. . . . Iowa State Fire Marshal John Strohm and a committee of the Linn county safety commission have agreed on 4-point to follow in effort to gain legislation eliminating fire hazards in auto trailers. Law will require **(1) an extinguisher in every trailer (2) elimination of non-removable windows (3) regulations making a second door in all trailers mandatory and (4) regulations on spacing trailers in trailer camps.** . . . Bremen (Ind.) residents were warned to exercise the utmost care to prevent fires. The fire department lost its rationing book! . . . In Plainville (Kans.) the city marshal left a youthful prisoner in the combination jail-fire station and the next thing he knew, Plainville's shrieking fire truck and the prisoner left together! Both were recovered, but the fire truck was a wreck! . . . In Salt Lake City (Col. G. says) bakery workers thought a little heat on the building's drain pipes might produce a synthetic thaw and prevent snow from piling up. City firemen hadda stop the thaw. The roof caught fire! . . . In St. Louis eight persons were led to safety as fire swept 17th floor of Mayfair Hotel. Firemen reported a ninth victim wasn't exactly "led" out of danger. When he refused to leave his room, firemen dragged him down the hall by one leg. . . . No one was going to put the snatch on Julie Cullin's quart of whiskey and get away with it. So, as she told the Court, when a stranger grabbed at her hooch at 4 A. M. she turned in the nearest fire alarm. The firemen were no help at all —gave her a summons (Julie oughta be glad they didn't "confiscate" her bottle!) . . . Keep this strictly between ourselves, but firemen of H & L 11, East Fifth street, New York City were forced to turn out at 3.01 one morning to extinguish a blaze in their own quarters. Debris behind a wall had had caught fire. No—the lads attended to the case without calling help. . . . In Hartland (N. Y.) more than 50 pure-bred canaries, regarded by their owner as priceless, were lose in a fire that destroyed home of Mr. and Mrs. Joseph Hein. . . . Firemen donned gas masks to remove body of Sam Spector, 57, who was found dead in a wine vat he had been cleaning in Chicago (Ill.) Wine fumes got him. Now don't anyone say *"that was a swell way to go."* . . . *In Kansas City fireman John R. Gawne drove up to the fire, hopped out—and discovered he was all alone. His fire-fighting crew, Bill Curtis and Pane Lane, bounced off the truck when it hit a dip in the pavement six blocks from the fire. Neither was seriously injured.* . . . 25 firemen were injured, one seriously, in general alarm fire in Union City (N. J.) Captain Bill Doescher, Hose Co. 1 Larchmont (N. Y.) F D is a bit mortified. His own house took fire on the roof, and he wasn't even in the Village to participate in the excitement. . . . One person was killed and 15 injured when fire, caused by short circuit in control box of a trolley in Birmingham caused panic on a crowded street car. . . . J. K.—Answering your question: of 211 recorded violent deaths in U. S. over this New Year's weekend, 81 were reported the result of fires.

* * *

No Whoa to These Woes!

If we did't see it in print, we wouldn't-a believed it ourself, but the news item's before us, sent by a eagle-eyed reader, and we quote it 'as is'

LANCASTER, PA., Jan. 22.—When a gasoline stove exploded in the farm home of Cameron, near here yesterday it started this chain of events:

7:02 a. m.—Mountville Volunteer Fire Company started for the scene.

7:05 a.m.—The automobile of Simon S. Nissley collided with the car of Roy Faust.

7:08 a.m.—While Nissley and Faust were arguing, a beer truck driven by William C. Reese struck the bumper-locked cars.

7:09 a.m.—Two air raid wardens arrived to clear the road for the fire engine.

7:10 a.m.—a car driven by Frank Hershey ran into the back of the beer truck.

7:11 a.m.—The fire engine crashed into the rear of Hershey's car.

7:13 a.m.—A milk truck driven by Martin L. Perters crashed into the back of the fire engine.

7:17 a. m.—The air raid wardens gave up and state police took over.

7:35 a. m.—The Cameron farmhouse burned to the ground.

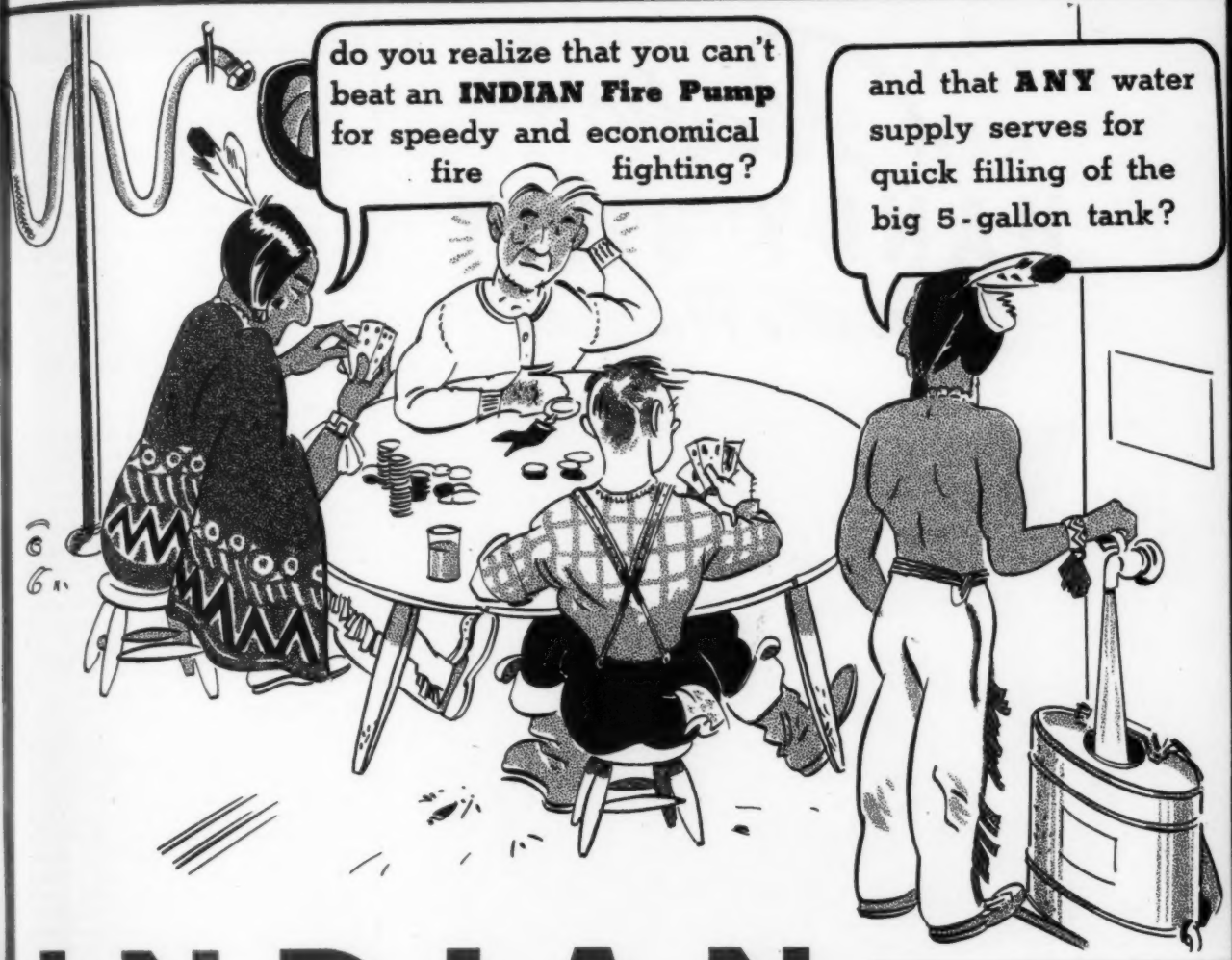
You can add your own punctuation!

* * *

Ado About—a Fire!

A Washington clipper sends us an item about 13 pieces of fire apparatus and a fire rescue squad car of District of Columbia F D which raced to answer "call from Navy Department Bldg. —only to find a scorched motorcycle. The usual noonday crowd collected, while the Brothers disgustedly wrote it all down in their records and climbed aboard the rigs to return to quarters. Came one of the Finest plowing his way like a battleship, through the jam. He barked: **"Break it up—Whadye think this is—a fire!"**

FIRE 'N PUMP The *"Injun House"* Twins By D. B. SMITH CO.


do you realize that you can't beat an INDIAN Fire Pump for speedy and economical fire fighting?
and that ANY water supply serves for quick filling of the big 5-gallon tank?

INDIAN

FIRE PUMPS *Never Let You Down!*

Clear water alone does the job. No chemicals. Fill big 5-gal. tank at faucet or any other water supply. Thousands of INDIAN FIRE PUMPS are in use by fire departments all over the country. Put your faith in INDIAN FIRE PUMPS for fighting fires inside and outside. They are your best all 'round extinguishers for roof, rubbish, grass, building, partition and other class A fires.

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CONSIDER These ADVANTAGES

The economy of using only clear water.

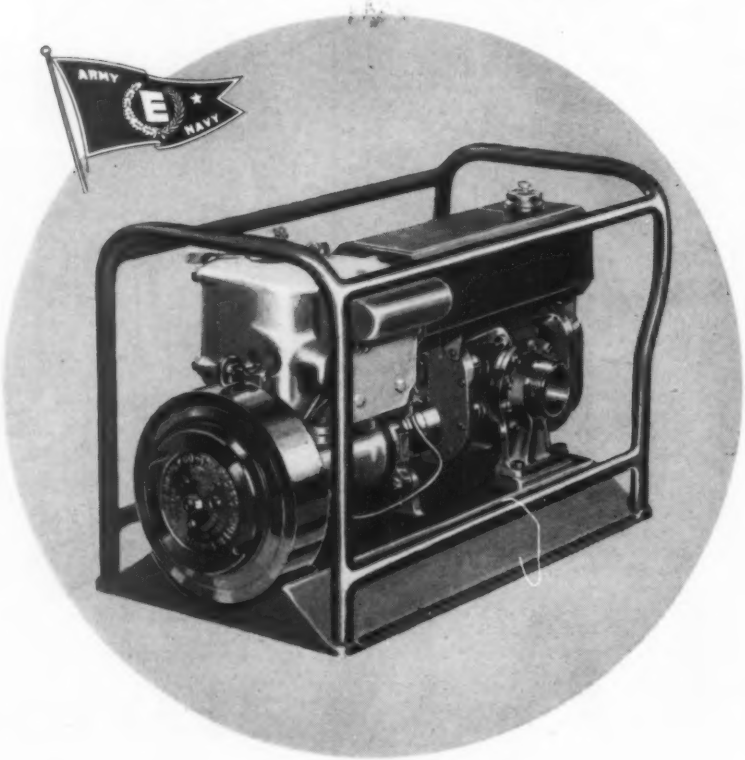
The *portability* of a hand pump which carries slung on the back.

The fact that *INDIAN FIRE PUMPS* work just as well on inside as on outside fires.

The way nozzle adjusts instantly from strong pressure stream to a spray.

The low initial cost of these sturdy, long life fire pumps which give years of service.

Pacific
HANDY BILLY
Portable Pumper



The principles of design and precision manufacture that have made the Pacific Handy Billy such an effective fire fighter for the Navy will, in due course, be available to protect forestry, industry and shipping against the ravages of fire.

Fire Fighting Equipment Division

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, WASHINGTON

War Fare

Hearse a Fire Truck

Oh well, who can beat Yankee ingenuity? A little of that stuff has converted an outmoded hearse into a life-saving device, according to the Milan (N. H.) press. Members of the town's auxiliary fire department obtained a serviceable truck by taking a 1934 hearse and adding to it a 500-gallon pump, six pack pumps, a searchlight, two ladders and miscellaneous equipment.

It might be a long time before Milan could acquire a bright new standard pumper truck. Meantime, the improvised hearse-pumper is doing its stuff.

* * *

Why Phosphorus Blazes

Earl Elliott, 14-year old Kansas City junior high school student wondered what made phosphorus blaze so hotly on tracer bullets and in incendiary bombs. So he took a small piece from the laboratory jar and stuffed it in his pocket to take home for further study.

He was almost to his seat when his trousers burst into flame. A schoolmate helped put out the fire. Hospital attendants said later his injuries were not serious. But Earl got his answer. He knows that exposure to air makes phosphorus blaze.

* * *

Nice "Present"

Postal inspectors of Minneapolis (Minn.) are seeking the identity of the person who sent Louise Murphy, 14-year old junior high school student, a half-pound package of TNT bearing an Army engineers corps label warning the explosive was **"dangerous"—for front-line demolition only."** The girl received the package in the mail, but military ordnance experts said it was comparatively safe to handle because it could normally be detonated only by percussion cap.

* * *

Fires and the War Effort

Fires in industrial plants, government installations and storage warehouses, and on railroads continue to furnish comfort to our enemies by slowing the war effort. Here are a few of them, some sent by our newsgathering contributors:

LA GRANGE, GA.—Thousands of gallons of gasoline were destroyed when about 25 tank cars burned. Nineteen other tank cars of Atlanta & West Point freight train were saved.

PITTSBURG, PA.—Stocks of army and navy parachutes manufactured by Pittsburgh Range Co., and Gerrard Steel Stapping Co. were lost in destruction by fire of building housing both. Loss $150,000.

SAN FRANCISCO, CALIF.—Military equipment stored in a waterfront warehouse was damaged to extent of $25,000 by fire.

SCRANTON, PA.—Two men met death, five were injured, three critically, by explosion of huge steam plant in tunnel of the bomber-wing plant of the Murray Corp., So. Scranton.

HERMISTOWN, ORE.—Commanding officer of Umatilla Army ammunition depot at Ordnance, Ore., said that "five or six persons are believed missing from an explosion which occurred in one of the many "igloos" in which ammunition is

stored." Blast broke windows six miles away and was felt in Pendleton, 30 miles east; luckily—no fire followed.

BROWNWOOD, TEX.—Seven soldiers at Camp Bowie, Tex. were killed, seven others injured in accident on gunnery range during practice.

ROCHESTER, *N. Y.*—When fire of "undetermined origin" swept storage plant in Rochester (N.Y.) large quantities of rationed food were destroyed. Damage estimated at $150,000 by Chief John Slattery.

* * *

Hot Off the War Ticker

Real use was made of stirrup pumps in extinguishing a fire on the grounds of the National Training School for Boys at Bladensburg Road and Central Avenue, Washington (D. C.) by two women air-raid wardens. They saw a fire in the brush, turned in an alarm, grabbed their stirrup pumps and went to work. Firemen congratulated them. . . . In Buffalo (N. Y.) three pumpers, a ladder truck and a chief raced to the home of Mrs. Marjorie Graziadei. They found the home undamaged but Mrs. Graziadei was all "het up" because her pork chops—8-points worth—had gone up in smoke. . . . Quick thinking and action by an air raid warden in Benton Harbor (Mich.) was credited with saving the life of Harold Lett during a test blackout. Lett and two companions were pouring gasoline into the tank of a car when the "red" signal caused all lights to go out. One of the three struck a match . . . gas exploded and Lett's clothing flamed up. Warden Paul Auringer, on the job, took off his shirt and used it to smother flames on Lett, who was hustled to hospital. . . . The Nazi's are reported to have a new "smoke" to shield war factories. . . . A bomb dropped during an air raid over Glasgow (Scotland) at dawn on March 14, 1941 killed outright 15 members of one family. . . . One puff of a cigarette in the crew smoking room aboard a ship at pier 9, North River (N.Y.C.) brought a 10-dav jail sentence to Albert Ingrassia, 53. Smoking isn't permitted even in the crew's quarters while the ship is tied up at the pier. . . . Two convicts sawed their way out of famous San Quentin (Calif.) prison and used a fire bomb to confuse the prison guard who shot at them with his rifle. They escaped from the prison yard. . . . In New York City small bullets, which police said were discharged accidentally from the gun of a ship anchored in the North River, pierced one side of a smokestack at the IRT powerhouse at 59th street and 12th avenue. . . . The papers say that heat resistant qualities of asbestos were dramatically demonstrated in laboratory findings and that some varieties of asbestos mined in Canada can withstand up to 5,000 degrees Fahn. . . . In Jersey City, John Eisen, 41 was found guilty of violating a city ordinance against smoking on a ship docked at a Jersey City pier. Fine $200! . . . From William Schwartz, avid clipper of Ocean Grove (N. J.) we received an item about a British sailor who saw American home defense in action when he tried to mail a letter in a fire alarm box. The city fire department arrived at the box in less than a minute —and the "limey" with his eyes popping out begged the Brothers' pardon and explained that in England the P.O. boxes are all "red". . . . It is said that it will

Firemen Like These Pants for Many Reasons

These Midwestern Bunker Pants are equipped with a removable wool lining which has safety snaps that cannot catch on anything. Sturdy construction, reinforced crotch for pole sliding. These pants together with coat illustrated below are Midwestern's outfit No. 101. Rubber or canvas type. Write for literature, including prices, material samples and deliveries.

- Lining held by snap buttons
- Rubberized fabric belt in lining
- Eight suspender buttons
- Safety snap on belt
- Two side and one hip pocket
- Reinforced adjustable belt
- Special Vanitex fabrics
- Wide protecting flap
- Reinforced by rivets

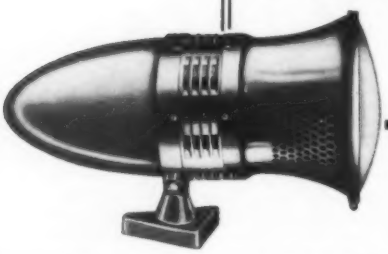
COAT TO MATCH

Flexible elastic inner sleeve for wrist. Keeps out water, cold and sparks. Adjustable collar strap, detachable wool lining, rubber or canvas type, Midwestern Safety Snaps, two outside pockets, and many other fine qualities. See your local Midwestern distributor for prices and literature or write the factory.

Midwestern Mfg. Co.
Mackinaw, Illinois

COMBINED SIREN and FLASHING BEACON

for Efficiency and Economy!



"Automatically Flashes On and Off"

THE SIRENLITE

This modern, up-to-the-minute SIRENLITE, No. 20, combines a shrill, penetrating siren and a brilliant, flashing red light to produce the most efficient and economical warning alarm that money can buy.

It is precision-built in the world's largest siren factory, and assures your apparatus quick, safe and sure passage even through the thickest traffic. The combination costs only slightly more than the siren alone and nowheres near the cost of the siren and light if purchased separately.

SIRENLITE No. 20 carries the guarantee of more than 30 years of exclusive siren manufacturing. Stick to Sterling and be safe!

Write for detailed literature

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

This emblem, which identifies one of the Nation's most complete lines of department supplies, is known and respected wherever fire fighting equipment is used. It is the mark of thoroughly sound design and extremely high quality.

ELKHART BRASS MANUFACTURING CO. Inc.
Elkhart, Indiana

Classified Advertisements

Bids Wanted, For Sale and Help Wanted, $5 per inch. Position Wanted, $2.50 per inch

WANTED

Fire Equipment Supply Companies, to sell Morning Pride Protected Rubber Firecoats, with Wing Sleeves, Chest Protector, Face Protecting Collar, Wool Wristlets, Double Shoulders, No Dirt Pockets. Also Firepants and Mitts. Write Morning Pride Mfg. Co., 1986 Home Ave., Dayton 7, Ohio.

CHIMNEY POWDER

No need to send men on the roof for chimney fires. Has-Mor Soot Destroyer not only puts the fire out, it continues to work until it cleans the chimney, making it unnecessary to go back to another chimney fire. Put up in handy packages. Agents wanted. Harry S. Morgan, 52 Broad St., Johnson City, N. Y.

FOR SALE FIRE DEPARTMENT SUPPLIES

Portable Pumps, Floodlight Generators and systems, Double Jacket Fire Hose, Booster Hose, Coats, Helmets, Masks, Fog Nozzles, Sirens, complete line of Fire Department supplies. Box 30, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

SALESMEN WANTED

To sell ALL TYPES OF FIRE EXTINGUISHERS including CARBON DIOXIDE to factories, war plants, large truck operators. Commissions above average. Write to Doray Fire Equipment Company, 1924 Valley Drive, Syracuse 7, N. Y.

FOR SALE—FIRE EQUIPMENT

Fire hose, brass goods, helmets, rubber coats, rubber boots both regular and regulation, Wet Battery lights, Indian Pumps, Portable Pumps, Extinguishers, including Carbon-dioxide 15 pound type with truck brackets. Whatever your needs, write for prices. Doray Fire Equipment Company, 1924 Valley Drive, Syracuse 7, N. Y.

be better than an 8-year job to clear Berlin of the debris resulting from the bombing the Allies have inflicted. . . . In Rochester (N. Y.) city firemen and New York Central employees fought a caboose fire in the railroad yards to keep a box car loaded with shotgun shells from exploding. Batt. Chief Edward Selko said the box car was attached to a caboose that caught fire when a switch engine bumped it and upset a coal stove.

Signal Men to Meet

The forty-ninth annual meeting of the International Municipal Signal Association will be held at the Hotel Statler, Boston, Mass., on October 2 through 5. The theme of the meeting will be "Today's Work—Tomorrow's Plans" and outstanding authorities will deliver papers on all phases of municipal signaling work—fire alarm, police telegraph, radio communication for both fire and police departments, traffic signals, etc. There will also be open forums participated in by members of the Association for discussion of various divisions of the work. It is expected that leading manufacturers in the field will have displays and demonstrations of equipment.

Maine Chiefs Meet

The quarterly meeting of the State Association of Fire Chiefs of Maine was held in Lewiston, Maine, on April 11.

The chiefs assembled at the Lewiston Central Fire Station at 10 a. m. and adjourned to Municipal Court Room in the hall where the meeting was held. Mayor J. C. Boucher of Lewiston welcomed the chiefs in a brief address, which was responded to by Chief Curtis Allen of Sanford.

At the business session eight applications for membership were received and accepted, all of whom were elected to active membership.

Because of the illness of Chief S. A. Mercier of Rumford and his wife, and the news that his son is reported missing in action, the members voted to send a telegram of sympathy to him.

As the state organization, as set up under civilian defense, has become somewhat depleted by death and induction in the armed services, State Administrator Ollie Sanborn of Portland, asked that the vacancies be filled to make the organization complete. It was voted that Chief Sanborn fill the vacancies and he made the following appointments: Assistant Administrator, Chief Richard Frates of Bath; Administrator for Kennebec County, Chief Grover Lovejoy of Waterville; Administrator for Hancock County, Chief McKeen of Bar Harbor.

Mr. C. R. Lawton, Vice President of the Dugas Company presented a moving picture illustrating the operation of the company's equipment. Mr. W. J. B. Kennedy gave a talk on two-way radio in the fire service.

The meeting adjourned at noon for dinner which was served at the DeWitt Hotel, with more than one hundred members and guests present.

Following the dinner remarks were made by Mayor Boucher of Lewiston, Mayor Levi T. Williams of Augusta, the Chief of Police of Lewiston, and Mr. Ralph Webber, State Supervisor of Firemen's Training under the OCD.

Inspection trips were made in the afternoon to industrial plants and the municipal pumping station.

J. W. RANDLETTE.

Assistant Chief O'Leary Dies

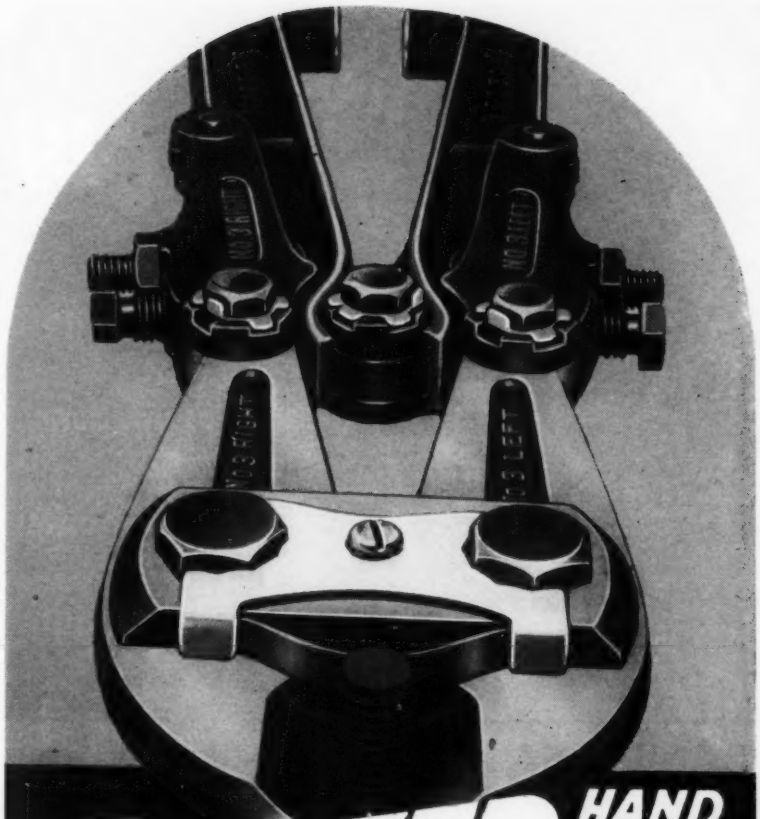
Assistant Chief Thomas J. O'Leary, a member of the Bridgeport, Conn., Fire Department for the past thirty-one years, died at his home in that city on April 3, following an illness of three weeks, due to a heart ailment. He was fifty-four years of age.

Associated with the Fire Department since his appointment as a hoseman on March 6, 1913, the deceased was one of the most respected and liked men in that Department. For a number of years he was aide to the late Chief Thomas F. Burns. In 1911 he was made a captain and promoted to assistant chief, through Civil Service competitive examination, in 1939.

Apparently in good health, Chief O'Leary was taken suddenly ill while on duty at Fire Headquarters on March 11. He was ordered to bed by his physician and remained there until his death.

Chief O'Leary is survived by his father, Thomas O'Leary; a son, John T. O'Leary, gunner's mate, 1-C, U.S.N.; a daughter, Helen O'Leary; and two sisters, Miss Mary C. and Miss Ann O'Leary.

THOMAS F. MAGNER.



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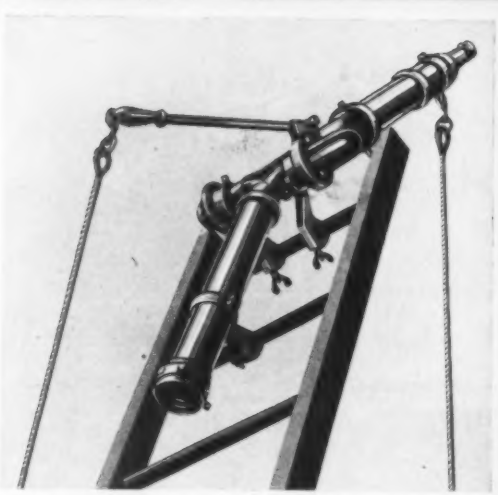

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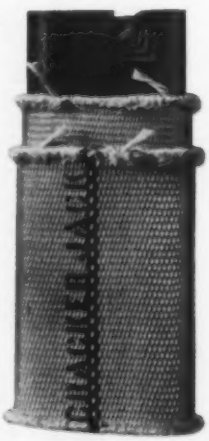

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Manufacturers' Announcements

Service Flags for Fire Departments

Many fire departments throughout the country are now installing service flags to honor the boys who have gone into the Army, Navy, Marine Corps, and Air service.

Besides striking a patriotic note, these service flags show concretely the part which the members of the department are playing in the war effort, and are a constant reminder to members of the sacrifice which these service men are making for their country.

The officially-authorized service flag is red, with a white field, and a blue star for each person in service. Gold stars are used to honor those who died in service.

The flags are used in various sizes, to suit the places where they are to be hung. Many flags are made to order, to fit a chosen spot on the wall according to a memorandum issued by Regalia Manufacturing Company of Rock Island, Ill., which has been making the flags for a considerable number of fire departments throughout the country. Most of the flags are designed so that stars can be added from time to time, as new men are called to the service.

Some of the departments are also using Service Plaques of walnut to honor their men in service, a gold name plate on the plaque for each man. Departments interested in honoring their service men may obtain a free catalogue of service flags, plaques, and similar items by writing Regalia Mfg. Co., Rock Island, Ill.

U. S. Motors Wins Army-Navy "E"

The United States Motor Corporation and its employees received signal honors at impressive ceremonies on April 7 when representatives of the armed services presented the coveted "E" banner for outstanding achievement.

The United States Motor Corporation builds electric power plants of all types ranging between 500 watt and 75 KW. Their output under war production contracts has gone to the Navy, Coast Guard, Signal Corps, Chemical Warfare Service, Ordnance Department, Corps of Engineers, Medical Corps and Marine Corps.

The electric energy produced by these plants is used for radar, communications, searchlights, automatic anti-aircraft fire, lights in base hospitals, power for Engineer Corps equipment, power for automatically-controlled devices on aircraft, service on ships, and other applications.

H. E. Smith, R. B. Davis, Vice-Presidents of Raybestos-Manhattan

Sumner Simpson, President of Raybestos-Manhattan, Inc., recently announced the election of Harry E. Smith, General Manager of the Manhattan Rubber Mfg. Division, Passaic, N. J., and Robert B. Davis, General Manager of The Raybestos Division, Stratford, Conn., as Vice-Presidents of Raybestos-Manhattan, Inc., at a meeting of directors of the corporation in New York on April 4. Both Mr. Smith and Mr. Davis are members of the Board of Directors.

Stockholders, at their annual meeting preceding the Directors' meeting, re-elected all directors of the corporation. Officers of Raybestos-Manhattan, Inc., were also re-elected, Mr. Smith and Mr. Davis being additions to the staff of officers.

New Folding Ladder Announced by Duo-Safety

The Duo-Safety Ladder Corporation, Oshkosh, Wis., has announced the production of a new type "Series G" heavy-duty, lightweight, folding ladder.

The ladder, according to its manufacturer, is easy to handle because of its light weight and compact banding. It folds into a bundle 3 inches by 3 inches. Special lock keeps ladder rigid in the open position. The ladder is equipped with Duo-Safety safety shoes. The ladder is made in the following sizes: 6, 7, 8, 9, 10, 12, 14, 16, 18, and 20 feet.

New York Office Moved

Dugas Engineering Corporation, a subsidiary of Ansul Chemical Company, Marinette, Wis., has occupied quarters in New York City. The company will share space with Ansul in the Lincoln Building at 60 East 42nd Street. Glen Stratton will be in charge of Dugas and T. R. Kearney will represent Ansul.

Aluminum Available for Ladders

The Aluminum Ladder Company, Worthington, Pa., announces that it has been granted allotments of aluminum by the government and is now able to manufacture a limited number of fire department, industrial and household ladders.

There will be no priorities required to purchase aluminum ladders but firms with priorities will receive first consideration.

C. H. Wyman Sales Manager of Dugas

Clifford H. Wyman has recently been appointed to the post of Sales Manager of the Dugas Engineering Corporation. In his new post, Mr. Wyman will be responsible for direction of the company's sale of Dugas Dry Chemical Fire Extinguishers.

Prior to joining the Dugas organization as manager of the district office in Chicago, in January, 1941, Mr. Wyman was employed by the Standard Oil Company of Indiana, and for fourteen years previous to that time he was with the Merco Nordstrom Valve Company, serving as District Manager of the Chicago, Detroit and New York territories.

Catalog Issued

The Wooster Brass Company of Wooster, Ohio, has issued a 122 page catalog describing in detail their fire fighting equipment. The catalog is divided into ten sections covering the subjects of cushion ball shut-offs; play pipes and deluge guns; nozzles, tips and accessories, couplings; siamese; miscellaneous hose accessories; maintenance, repair and test equipment; miscellaneous fire department equipment; safety and first aid equipment and engineering data, and reference tables.

ACME TYPE FD

Full Vision

ALL-PURPOSE GAS MASK

IS APPROVED BY THE

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The Acme Type FD Gas Mask has proven its dependability many times, through its wide, and continued use by firemen throughout the United States. It is also approved by the U. S. Bureau of Mines.

These Acme Masks are comfortable to wear because there are no pressure points on the adjustment straps to cause headaches. Even with this ease of adjustment to head size, the Acme Masks fit snugly and are gas-tight. They also have the exclusive Acme wide, flat, FULL VISION Lenses that DO NOT distort the vision.

Acme FULL VISION All-Purpose Type FD Gas Masks and Canisters provide protection against Carbon Monoxide, Acid Gases, Organic Vapors, Toxic Smokes, Fumes, and Smoke Suffocation. Write for prices and literature.

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Now—because of the Government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium—we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver and 14 karat gold.

Today—for just a little more, you get a sterling silver Braxmar Badge—without doubt the best badge you can buy anywhere.

The blue covered catalog is the latest published but write for our new price list, effective July 29, 1943. Only prices in the catalog on 14 karat gold items are still in effect. A special Fire Dept. circular is now in preparation. Watch for your copy.

C. G. Braxmar Co., 242 W. 55th St., N. Y.
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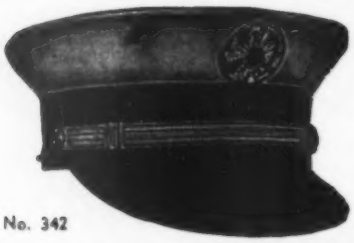
UNION MADE PROMPT DELIVERY



No. 342

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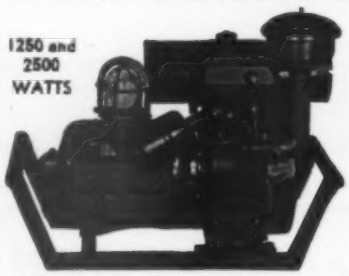

This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

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Chief John Nevel Retires

Chief John Nevel of the Berea, Ohio, Fire Department has retired after fifty years in the fire service.

He was appointed to the Cleveland Fire Department on March 17, 1894 and was assigned to Engine Co. 2, serving two years on probation. He was promoted to assistant engineer on October 1, 1904 and assigned to Engine Co. 1. He was transferred to Engine Co. No. 7 in 1905, and on December 28, 1911, was promoted to engineer. He remained in Engine Co. No. 7 until he retired on September 24, 1921. On October 1, 1921 he went to Berea as chief engineer, and was appointed chief of the department on August 1, 1927, which position he held until his retirement on March 16.

When Chief Nevel came to Berea as a member of the fire department, he established a system of records of all fires and other activities of the department. This system is still in use today, The fire department was a volunteer department and Chief Nevel was the first paid fireman.

Chief Nevel has been a member of the Ohio Fire Chiefs Association for the last seventeen years. He is also a member of the Lake Erie Firemen's Association and the International Association of Fire Chiefs.

On March 17 he was given a farewell dinner, at which Mayor Baisel of Berea was the principal speaker. He was also presented with a number of substantial gifts.

Chief Fred Washburn Dies

Chief Fred J. Washburn, veteran of forty years with the Auburn, N. Y., Fire Department, and its head for seventeen years, died on April 13, from a heart attack, suffered in his office.

Chief Washburn had returned to duty on March 13 after being out on sick leave since January 23, 1943.

He was named a permanent fireman on May 3, 1900, and assigned to Hose Co. No. 3. He was promoted to captain of Hose 1 on August 1, 1907, and was made second assistant chief on November 1, 1921.

Subsequently he became first assistant chief on January 1, 1926, and was named chief on October 5, 1927.

Chief Washburn was a member of the New York State Permanent Firemen's Association, the New York State Fire Chiefs Association and the Central New York Firemen's Association.

Chief John J. Brennan Retires

Effective May 1, 1944, Chief of Department John J. Brennan, of Pelham Manor, N. Y., has retired, after more than forty years of outstanding service in the Fire Departments of New York City and Pelham Manor. Officially Chief Brennan's retirement will take effect on June 1st, as he is taking the month of May for his vacation period.

Chief Brennan, who is widely known throughout the United States, entered the Fire Department of the City of New York on September 21, 1903. As a fireman he worked in Truck Companies 7, 16 and 12, and on the anniversary of his original appointment he was promoted to Lieutenant on September 21, 1914. As a lieutenant Chief Brennan served in Engines 14 and 39, until his promotion to captain on December 24, 1916, when he was assigned to command Engine 55 in lower Manhattan. Promoted to Chief of Battalion on February 16, 1923 Chief Brennan was given command of the Third Battalion, one of the toughest in

Chief John J. Brennan

the City from the standpoint of hazards and number of fires. Before his retirement from the New York Department on August 31, 1925 Chief Brennan had ben commander of the Third, Fifth and Fourteenth Battalions.

Following a series of serious fires in Pelham Manor the Mayor of this suburban community in Westchester County, called on Chief John Kenlon of New York City and asked for his recommendation of an experienced chief officer to reorganize and command the Pelham Manor firefighters. Chief Kenlon unhesitatingly and enthusiastically recommended Chief Brennan.

Now, after more than sixteen years service as Chief of Department in Pelham Manor, Chief Brennan feels that he should take time to enjoy a well earned retirement. His decision will be particularly felt and regretted by the Fire Chiefs Emergency Plan of Westchester County, of which Chief Brennan was one of the founders and most untiring and enthusiastic workers.

At the April meting of the Westchester organization a committee was appointed to provide a suitable token of the Plan's regard of Chief Brennan, and appreciation of his work for the Fire Service. The Annual Dinner of the Westchester Chiefs Emergency Plan on May 17th. will be the occasion for the presentation of the gift.

CLARENCE E. MEEK.

New Hampshire Chiefs Meet

At the annual meeting of the New Hampshire Fire Chiefs Association in Concord, on April 16, the following officers were elected: Chief Anthony Molloy, Nashua, President; Chief Fred Sargent, Sunapee, First Vice President; Chief Vernon West, North Sutton, Second Vice-President; executive committee, Chief Charles H. French, Manchester, Chief George Lamotte, retiring President of Hampton, Chief Fred Sargent of Sunapee, Chief Eugene Riley of

Keene and Chief H. J. Cornell of Hudson; Sergeant-at-Arms, O. B. Berquist of Berlin; auditors, Clarence H. Green of Concord and Wesley Robinson of Loudon.

A quiz program including questions which were of interest to the visiting chiefs was one of the features of the meeting.

Questions of postwar training of returning servicemen, and the training of women as firefighters in the rural communities were discussed after the quiz program, and the fact was brought out that several small communities in the state have already organized women's auxiliary fire fighting units, which have proved effective.

Chief Pachl Consultant on Firemen Training

John S. Pachl, for twenty-three years Chief of the Annex Fire Department in New Haven, Conn., has been engaged by the State Department of Education as consultant on firemen training, and will supervise the regular training program conducted by the State Department this year, A. M. McCullough, Departmental Director of Public Service Training, has announced.

Mr. Pachl, on leave of absence from his position in New Haven, is connected with many fire fighters' organizations and is a past president of the New England Association of Fire Chiefs. In his state work, he will cooperate with local fire department and organization officials in the operation of the statewide training program.

This program is sponsored cooperatively by the State Department of Education, the Connecticut Fire Chiefs' Club, and the Connecticut Fire Department Drillmasters' Association.

The courses are given at regional meetings, and are established primarily for the benefit of volunteer fire departments who send representatives to receive this training in all phases of fire fighting which they in turn pass on to other members of their organizations. During the past four or five years, 1500 firemen of the state have received this training.

Governor Dewey Signs "Flophouse" Bill

Governor Thomas E. Dewey of New York State signed the Desmond Bill imposing standards of safety for a type of lodging house characterized as "A flophouse." These have been unregulated heretofore.

This type of building was involved in a disastrous loss of life as the result of a fire in New York City last December.

Among the safety standards mandated for non-fireproof lodging houses of the type descriped are limitations on the use of wood construction and specifications regarding door and window openings, fire-retarding measures, the maintenance of automatic sprinkler systems, etc.

The number of lodgers is limited to twenty-two for each full multiple of twenty-two inches in the smallest clear width of each means of egress, other than a fire escape, and to twenty for each regulation fire escape accessible on each floor if it is above the entrance floor. All lodging houses must be inspected by the fire department at least once every three months.

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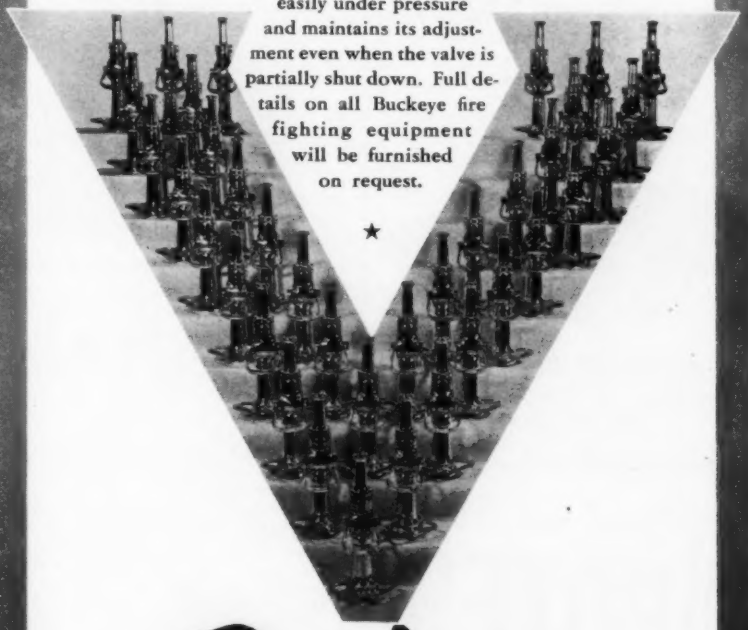

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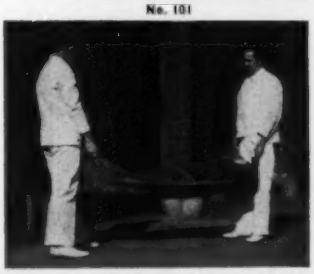

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FIRE APPARATUS and FIRE DEPARTMENT SUPPLIES
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LOGANSPORT INDIANA

Chief James Armstrong Retires

Fire Chief James Armstrong of the Kingston, Ont., Fire Department retired on April 1, after forty-seven years in the fire service.

Chief Armstrong has been associated with the Kingston Fire Department since June, 1909, coming there from Port Arthur where he was in charge of the department. He started as a firefighter with the Toronto Fire Department on May 27, 1897. He was the first full paid fire chief at Port Arthur, taking charge on June 15, 1908. A year later, on June 7, 1909, he moved to Kingston and became associated with that department.

Chief James Armstrong

He is one of the original members, and was the first treasurer of the Provincial Association of Fire Chiefs, and served on its board of directors for four years. He accepted the office as secretary of that body on April 1, 1915. In August of that year the provincial board changed to the Dominion Association of Fire Chiefs, and Chief Armstrong was elected secretary, serving as such until August, 1936. In August of that year, the offices of secretary and treasurer were combined and Chief Armstrong was elected to that post and has held it ever since.

Chief Armstrong has also been associated with the International Association of Fire Chiefs, serving as president of that organization in 1925-1926.

He was the first chief in Eastern Ontario and the fourth in the Dominion to have the two platoon system of duty introduced into his department, also the first in Eastern Ontario and the second in the Dominion to introduce the use of the five-gallon hand pumps for fighting small fires. These later became standard equipment in all departments.

Firemen Sue to Recover Back Pay

Firemen throughout the country will follow with interest the progress of two Superior Court actions in which 357 active and retired members of the Bridgeport, Conn., Police and Fire Departments are claiming damages of $1,606,500 against the City of Bridgeport as the result of wages lost through salary waivers in effect from April 1, 1932 to March 31, 1938.

The two suits, in which the plaintiffs claim that $1,171,000 is due them in back wages surrendered during the six years' period of economic depression, are believed to be unprecedented, and on the outcome will be based the future course of action of other firemen and policemen similarly situated.

The actions are based on the general obligation that the municipality was under a legal obligation to pay the plaintiffs fixed salaries for certain specific duties which they performed, and that it failed, neglected and refused to do so.

Among the 182 firemen and 175 policemen, active and retired, who have joined as parties plaintiff in the suits, are many ranking officers of both Departments.

Attorney Samuel Reich of Bridgeport, counsel for the petitioners, has announced that a third action is being prepared for administrators of estates of forty-three deceased firemen and policemen. When this suit is filed there will be a total of 400 plaintiffs claiming damages of $1,800,000.

The plaintiffs claim that the City failed to pay them specific salaries to which they were entitled under the law. Each plaintiff seeks damages of $4,500.

The Cover Picture

The Chemical Warfare Service of the Army Service Forces has the heavy responsibility of supplying every category of incendiary to the armed forces and also sends considerable quantities to our allies. Formerly a third of the work of the Chemical Warfare Corps, the supply of incendiary material now constitutes more than fifty per cent of its work.

The front cover photograph shows U. S. Army Air Force white phosphorus bombs bursting over a Jap bomber and fighter plane on Lakunai airfield, Rabaul, New Britain. This 100 pd. bomb is an effective weapon against enemy anti-aircraft positions and parked planes. Upon impact the bomb bursts and scatters particles of burning phosphorus over a wide area. This photograph was taken by U. S. Army photographers.

A Novel Solution to a Serious Problem

The Napa, California, Fire Department has found a novel solution to the problem of motorists' chasing, or rather beating the department to the scene of a fire.

When Chief Vernon D. Van Sant, formerly of Dixon, Cal., arrived to take over the leadership of the fire department, he found the residents all had their boxes listed in their automobiles as the fire department operates on the call system for volunteer fire departments. When a call went out, everybody jumped in his car and created a traffic congestion to the fire. He fixed that by changing the north side boxes over to the south side and vice versa. When the next box came in, all the fire chasers followed the old system and the firemen found it clear sailing to the fire.

Name Changed

As of May 1, the name of the Kentucky Actuarial Bureau has been changed to the Kentucky Inspection Bureau. Present conditions, however, necessitate the continued use of various supplies bearing the name "Kentucky Actuarial Bureau".

Convention Dates

May 22—MIDWEST PLANT PROTECTION CONFERENCE. Sixteen weeks course beginning May 22, Washington University, St. Louis, Mo. Secretary C. W. Gabel, Supt. of Plant Protection, The Emerson Electric Mfg. Co., St. Louis.

May 22-24—NEW YORK STATE FIRE CHIEFS ASSOCIATION. Annual meeting, Utica, N. Y. Secretary, Chief Henry Drake, Clinton Corners, New York.

June 6-8—OKLAHOMA STATE FIREMEN'S ASSOCIATION. Annual meeting, Oklahoma City, Okla. Secretary, Charles Slemp, 1701 Northeast 63rd Street, Oklahoma City, Okla.

June 6-9—ILLINOIS FIRE COLLEGE. Annual meeting, University of Illinois, Champaign-Urbana. Director, Professor L. H. Provine, Urbana, Ill.

June 8—CONNECTICUT FIRE COLLEGE. Annual meeting, University of Connecticut, Storrs, Conn. A. M. McCullough, Director, Public Service Training, Department of Education, Hartford, Conn.

June 12-14—NEW MEXICO STATE FIREMEN'S ASSOCIATION. Annual meeting, Raton, N. M. Secretary, Theo. A. Rosenwald, Albuquerque, N. M.

June 13-15—SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Birmingham, Ala. Secretary, Chief Walter W. Stephen, Box 905, Anniston, Ala.

June 15-17—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Harrisburg, Pa. Secretary, Chief Charles E. Clark, Box 271, Wayne, Pa.

June 19-21—MICHIGAN STATE FIREMEN'S ASSOCIATION. Annual meeting, Kalamazoo, Mich. Secretary, Lyle P. Burge, Central Fire Station, Kalamazoo, Mich.

June 19-22—COLORADO STATE FIREMEN'S ASSOCIATION. Annual convention, fire school and tournament, Idaho Springs, Colo. Secretary Clinton Turnbull, 215 Boston Building, Denver, Colo.

June 20-21—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Little Rock, Ark. Fresident, Chief G. R. McAlpine, Fire Headquarters, Oklahoma City, Okla.

June 27-29—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting, Dixville Notch, N. H. Secretary, Chief John W. O'Hearn, 99 Main Street, Watertown, Mass.

June 28-29—MARYLAND STATE FIREMEN'S ASSOCIATION. Annual meeting, Baltimore, Md. Secretary, B. R. Benson, 303 Bosley Avenue, Baltimore, 4, Md.

July 9-12—DOMINION ASSOCIATION OF FIRE CHIEFS. Anual meeting, Hotel Chateau Frontenac, Quebec City, Que. Secretary, Chief James Armstrong, Kingston, Ont.

July 17-19—WISCONSIN STATE FIRE CHIEFS ASSOCIATION. Anual meeting, Plymouth, Wis. Secretary, Chief Arthur J. Rahn, Two Rivers, Wis.

Aug. 7-12—PENNSYLVANIA FIREMEN'S TRAINING CONFERENCE. Annual meeting, Lewistown, Pa. Secretary, Chief Charles E. Clark, Box 271, Wayne, Pa.

Aug. 15-17—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. Annual meeting. Secretary, Chief Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Sept. 4-8—WESTERN PENNSYLVANIA FIREMEN'S TRAINING INSTITUTE. Annual school, State Teachers' College, California, Pa. Secretary, Chief Henry Neill, Box 83, Vestaburg, Pa.

Sept. 5-7—KENTUCKY FIREMEN'S ASSOCIATION. Annual meeting, and fire school, Paris, Ky. Secretary, Captain V. A. Beam, 2221 W. Broadway, Louisville, 11, Ky.

Oct. 2-4—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Boston, Mass. Secretary, Irvin Shulsinger, 8 East 41 Street, New York, N. Y.

Chief D. G. Kropf with Ordnance Company

Chief Douglas G. Kropf has resigned from the Warren, Pa., Fire Department to accept the position of Director of Plant Protection with the National Forge and Ordnance Company, at Irvine, Warren County, Pa. In this position he has charge of fire, police and plant security.

Chief Kropf has had twenty-six consecutive years in the fire service, both volunteer and paid. He has also served several years as Chief of Police in New York State, while he was a volunteer fireman.

"HAHN" FIRE APPARATUS

SINCE 1907

FINEST IN THE WORLD ★ STREAMLINED ★ BALANCED CHASSIS ★ AMPLY POWERED ★ VERY EFFICIENT PUMPS WITH PLENTY IN RESERVE

★

HAHN MOTORS, Inc.

HAMBURG, PA.

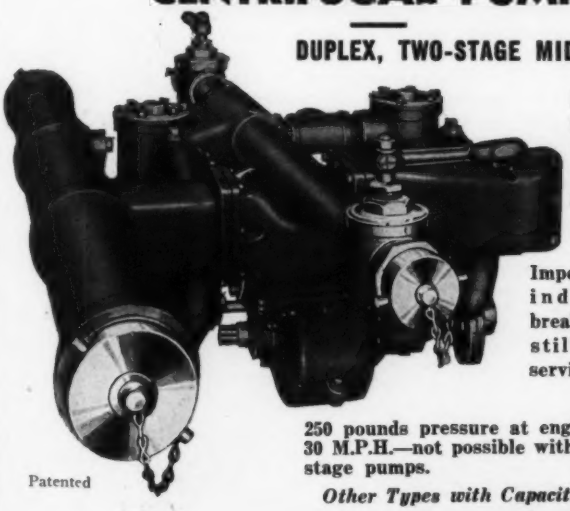
Barton Front Mounted

AMERICAN-MARSH PUMPS

Barton-American Midship

FIRE APPARATUS CENTRIFUGAL PUMPS

DUPLEX, TWO-STAGE MIDSHIP MOUNTED



Patented

High Pressure performance entirely unaffected when unit used to pump gritty water.

•

Impellers mounted on individual shafts—breakdown of one pump still leaves one for service.

•

250 pounds pressure at engine speed equal to 30 M.P.H.—not possible with conventional two-stage pumps.

Other Types with Capacities to 750 G.P.M.

•

WRITE FOR BULLETIN 8731F

•

AMERICAN-MARSH PUMPS, INC., Battle Creek, Michigan

Pumps — and pumps only — since 1873

WHEN SPLIT SECONDS Count!
To smash strafing planes coming in fast from any angle, self-powered multiple mounted machine guns enable gunners to concentrate on hitting the targets, while speedily and effortlessly the guns are swung around, raised or lowered. One more service stripe for the hundreds of thousands of Briggs & Stratton engines now with our armed forces.
THE urgent necessity of dependable power for purposes never before imagined, have revealed the amazing versatility of Briggs & Stratton 4-cycle, air-cooled gasoline engines. Their stamina, rugged dependability and superior performance under circumstances rarely encountered in peacetime, have demonstrated Briggs & Stratton high standards of quality in precision manufacture, and substantiated their recognition as "the world's finest air-cooled gasoline engines."
Our years of experience in design and production of air-cooled engines is again available to you on present problems or in your planning for postwar gasoline engine requirements.
"It's powered right—when it's powered by Briggs & Stratton."
BRIGGS & STRATTON CORP.
MILWAUKEE 1, WISCONSIN, U.S.A.
BACK THE INVASION
BUY WAR BONDS
4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES

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MAY, 1944

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How Soon

WILL YOUR APPARATUS GET THERE?

Just as surely as you get more than twice the water through a 4 inch hose as is possible through a 2 inch hose—so do you double your certainty of getting to the fire quicker and safer with four-wheel-drive apparatus—for with the FWD—all four wheels are alive with power and grip the road for the run—and slippery roads and bad grades, impassable to ordinary vehicles—are safely negotiated with FWD's . . . the two driving axles of the FWD, delivering powered traction to front as well as rear wheels, give you double protection in safety and dependability—protect the lives of firemen and users of the street—FWD is doubly sure of getting to the fire. Its increased traction and positive control save minutes that count. Cities from coast-to-coast look to FWD apparatus for this extra safety and performance. Available in a complete line of fire trucks with rotary or centrifugal pumpers in triple or quadruple combination, aerials, etc. Write for literature.

THE FOUR WHEEL DRIVE AUTO COMPANY

Canadian Factory: Kitchener, Ontario

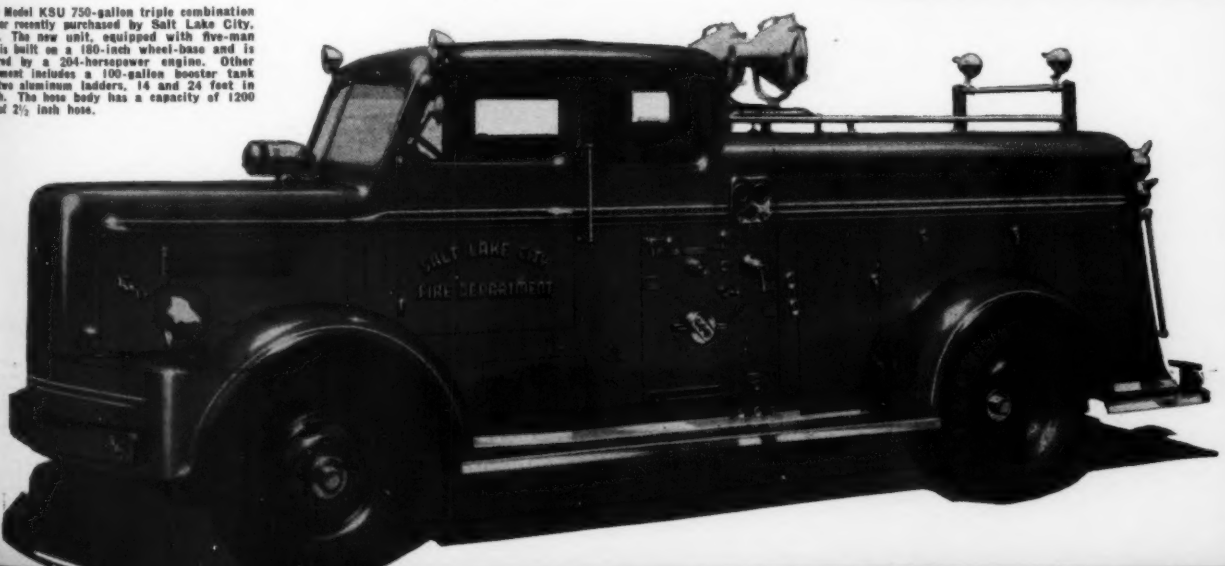
CLINTONVILLE WISCONSIN

FWD

FOUR WHEEL DRIVE

FIRE APPARATUS

***Built By the Oldest and Largest Four-Wheel-Drive Truck Manufacturer**



FWD Model KSU 750-gallon triple combination pumper recently purchased by Salt Lake City, Utah. The new unit, equipped with five-man cab, is built on a 180-inch wheel-base and is powered by a 264-horsepower engine. Other equipment includes a 100-gallon booster tank and two aluminum ladders, 14 and 24 feet in length. The hose body has a capacity of 1200 feet of 2½ inch hose.

FIRE OUT IN 90 SECONDS WITH FOGNOZL WATER FOG

Rescue was effected from the cabin of a burning plane in 30 seconds, complete extinguishment in one minute and 30 seconds.

That's action—fast—where time counts, plus every factor of safety in the fire fighters' favor.

Fognozl Water Fog, by utilizing in one operation the three prime factors of fire fighting—dilution of explosive vapors, smothering of flames, and rapid cooling of material—has made possible such quick results.

Another important factor is the fire fighters' ability to have closer approach to the fire source, since the vapor screen, thrown in front of the fire fighter, gives positive protection against backflash and dangerous fumes.

Fognozl applicators and nozzles have stood up under the toughest jobs of actual use in war. Numerous government departments have given their approval to Fognozl equipment. Its wide use in industry, and by fire fighting units throughout the country is proof of its efficiency.

Fognozl equipment, attached to hose lines or mobile units, is the answer to aviation's ever-present problem of fire hazards, because Fognozl Water Fog is still the finest type of extinguisher, and without question, the most economical. For data on Fognozl, your finest fire protection, write today.

- PROTECTION TO PERSONNEL
  TO FIREMEN AND FIRE VICTIMS
- RAPID EXTINGUISHMENT
  A MATTER OF SECONDS
- REDUCED WATER DAMAGE
  A RATIO OF 1 TO 30 GALLONS
- ECONOMY & AVAILABLE SUPPLY
  PLAIN WATER

• FOGNOZL FACTS—PREPARE BY ACCUMULATING DATA ON THIS NEW WATER FOGNOZL FIRE-FIGHTING METHOD THAT HAS REVOLUTIONIZED OLD METHODS. FOGNOZL ACCOMPLISHMENTS ARE DAILY EMPHASIZED BY OUR ARMED FORCES.

• A BROCHURE OF FOGNOZL FACTS WILL BE SENT, WITHOUT OBLIGATION, TO THOSE ENGINEERS OR EXECUTIVES WHO WILL SO REQUEST IT ON THEIR OFFICIAL OR DEPARTMENT LETTERHEAD.

IN FOLDER CONVENIENT FOR YOUR FILE

We offer you a prize of $100 for the picture (or a set of pictures) sent in by any fireman, showing a fire of any kind being extinguished with any of our various models (old or new) of ALL-PURPOSE FOGNOZLS. The only requirement is that the pictures must be of sufficient value to be reproduced and are used in our monthly advertisement on the back cover of Fire Engineering. We will use the best picture for this purpose and send $100 to prize winner. Offer is open for next few issues of this magazine.

FOG NOZZLE GRISWOLD ORIGINAL WATER FOGNOZL **COMPANY**

1520 EAST SLAUSON AVENUE **LOS ANGELES 11, CALIFORNIA**

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